Impact Assessment Study under Holistic Rural Development Programme (HRDP) Karnataka – P0284

Prepared For:

HDFC BANK | PARIVARTAN
A step towards sustainable progress

HDFC Bank CSR

Prepared By:

NRMC
An Intellecap Subsidiary

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Executive Summary

The HDFC Bank supported MYRADA for implementing HRDP in 16 villages spread across three districts of North Karnataka: Raichur, Gulbarga, and Bidar. Post completion of the project, NRMC, a third-party research agency conducted an impact assessment of this project.

The assessment strategy and methodology for the study were created to thoroughly assess the performance and implementation efficiency of the project. The study's objectives were to evaluate the impact of project interventions & activities, its 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 were used to assess the project outcomes and impact. The pre and post project outcomes were recorded using retrospective recall, which offered insights into changes on the project indicators over time. The samples for the study were chosen using stratified random sampling and the PPS (Probability Proportional to Size) method. The assessment covered 9 villages, 405 households interviews, , 4 In-Depth Interviews (IDIs), 4 Key Informant Interviews (KIIs), and 8 Focus Group Discussions (FGDs) . This comprehensive research design enabled a thorough evaluation of the project's impact, learning, and recommendations for future interventions.

NRM

The project has yielded improvements in the agricultural income of participating households in the project areas. The **net income from agriculture increased from Rs. 40,000 (at baseline) to Rs. 55,000 (at endline), on average.** Households **reported a 28 percent increase in gross income from agriculture**, attributing the project's success for enhanced productivity and adoption of better agricultural practices. **Average productivity of major crops like toor dal, soyabean, and cotton have also increased by 17 percent.** Additionally, **there has been a decrease in chemical fertiliser usage, with over 85 percent of respondents indicating reduced usage**. Farmers have embraced organic farming with **nearly 50 percent of them using organic fertiliser like azolla and vermi-composting**, resulting in better-quality yields and lesser expenditure on fertilizer. Moreover, the project has encouraged crop diversification, leading to changes in the proportion of farmers growing various crops. The implementation of clean energy interventions, including solar lights, has been well-received by the community, benefiting school-going children and providing better lighting options during electricity shortages. **More than 85 percent of the respondents have benefitted from the implementation of solar street lights.**

Health and Sanitation

Health camps have **achieved a 92 percent participation rate**, providing widespread outreach of medical services. Additionally, 37 percent of the community members has actively participated in hygiene-related awareness sessions, adopting good hygiene practices. The respondents who attended health camps and clinics received medication. The perceived benefits of these interventions include **improved dietary habits (95%), increased physical activity (90%), reduced consumption of harmful substances (56%), and easier access to health services for women (83%).** In the area of sanitation, the implementation of sanitation services yielded positive impacts, with **76 percent of households now having access to sanitation units, enhancing hygiene practices**. The benefits of improved sanitation include better overall health (91%), increased safety for women (100%), and enhanced dignity (53%). The kitchen gardens promoted under the project has empowered the community by providing seeds (88%) and training (67%), fostering food security and self-sufficiency in assessing nutritional food. **29.2**

percent of respondents stated that they used their produce for self-consumption, promoting healthier eating habits, while another 29.2 percent reported that they sold, contributing to income generation in addition to the consumption.

Skill Training and Livelihood Enhancement

The project's initiatives in sustainable agriculture have led to significant improvements in productivity and income for the farming community. The **adoption of organic manure, vermi-pits, and timely application of fertiliser and insecticides has resulted in a 78 percent increase in productivity and a 28 percent rise in income** for the respondents. **Conservation agriculture practices have contributed to improved soil health (50%) and pest management (30%), reducing crop losses (31%).** The project's interventions have been well-received by the community, with **70 percent of respondents currently using organic farming methods and 48 percent adopting conservation agriculture practices.** The project's support for Self-Help Groups (SHGs) has resulted in economic empowerment and improved livelihoods for its members. **56 percent of SHG members reported an increase in income generation, with 97 percent saving personally.** The establishment or revival of 92.4 percent of SHGs and training for 74.7 percent have contributed to the success of these groups in fostering entrepreneurship and financial stability. **The median income from SHG enterprise increased from Rs. 1530 to Rs. 4040,** highlighting the positive impact on household income. Livestock services have also been a significant success, with improvements seen in the income and production of households. **The adoption of livestock management practices has resulted in better livestock health (45%) and increased household savings (18%).** Livestock income has also contributed to household income, with goat ownership alone providing a median **income increase from Rs. 500 to Rs. 1750**. The project's skill and entrepreneurship development initiatives have seen positive results, with **88 percent of respondents availing skill training for job-oriented** programs. Training in driving and enterprise development has been particularly successful, enabling youth and women to support their families financially. Women trained in tailoring and provided with tailoring machines have been able to start their businesses and contribute to their household income.

Promotion of Education

The implementation of smart classes and the provision of learning materials in schools have shown positive outcomes for students in the project villages. Smart classes have been well-received, with **91 percent of students finding lessons more engaging and 89 percent reporting better understanding.** Additionally, 36 percent of students noted faster syllabus coverage, and 43 percent found it easier to recall lessons. The library support has been beneficial for academic preparations, **with 67 percent of individuals finding essential reference materials for exams.** Moreover, 53 percent of students have used the library to complete assignments, and **55 percent appreciated access to reading materials beyond the syllabus,** contributing to a broader knowledge base. The library has also played a crucial role in improving reading habits for 71 percent of users.

Table 1: Summary of Key Impact Indicators

Indicators (based on median)	Before	After	% Change
Increase in average productivity (of three major crops) (kg/acre)	433	508	17%
Increase in net annual income from agriculture	INR 40000	INR 55000	37%
Monthly income from livestock	INR 1000	INR 1500	50%

Monthly income from SHG business activity	INR 1000	INR 1800	80%
Monthly income from developed skill/job	INR 6500	INR 12000	85%

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 0.62 indicating a notable positive change of 114 percent toward the desired impact from the baseline score of 0.29.**

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

Table 2: Summary of HRDI Scores

Domain	NRM		ST&LE		H&S		PoE		Total	
HRDI Score	Base line	End line	Base line	End line	Base line	End line	Baseline	Endline	Baseline	Endline
	0.06	**0.09**	**0.10**	**0.20**	**0.10**	**0.21**	**0.02**	**0.12**	**0.29**	**0.62**
%Change	**50%**		**100%**		**110%**		**500%**		**114%**	

Conclusion and Recommendations

The initiative in Gulbarga, Bidar, and Raichur has produced considerable positive results in a number of crucial areas, including natural resource management, health and sanitation, skill training and livelihood enhancement, and education promotion. Notably, the project has increased farmer income and crop productivity, fostered sustainable farming practises, and increased access to clean energy alternatives. It has successfully involved the community in health camps and hygiene awareness, as well as improved sanitation facilities and promoted kitchen gardens, in the field of health and sanitation. Increased production and income have emerged from skill training initiatives, particularly through support for Self-Help Groups and livestock management. Furthermore, the project's educational innovations, such as smart classes and libraries, have influenced students positively, making lessons more interesting and supporting a broader knowledge base. This project has definitely made a significant and positive influence in the lives of the people it serves, with an HRDI score suggesting a stunning 114 percent improvement from the baseline.

Natural Resource Management

- Because the area is prone to drought, more interventions in drinking water, such as the installation of water filters and the deployment of water tankers, would have been more useful to the community.
- Agriculture specialists should undertake follow-up visits to ensure farmers are utilising the practises taught and to assist them with their problems.
- The formation of floriculture-specific farmer associations in order to cut transportation costs and thereby increase revenues.

- Assisting floriculturists in creating market contacts may also benefit them, as the very volatile and dynamic flower market makes it difficult for them to earn a living.

Skill Development and Livelihood Enhancement

- It is critical to give firms with hands-on assistance so that they may build market links, business plans, connections to government programmes, and so on.
- More opportunities for women and young people to make money, as well as business training, as these efforts have been highly appreciated.
- Advanced training in production practises and the use of machines/tools for farmers to stay up with market needs.

Health and Sanitation

- Frequent health camps would be beneficial for the community as many of the villages need to travel far for their medical needs.

1 Introduction

Over the years, India has made enormous strides in rural development. While 65% of the country's population lives in rural areas (as of 2021), 47% of the country's population is still dependent on agriculture for a living (PIB Delhi, 2023). The rural ecosystem has grown by around 10% per year over the last five years, but it is still plagued by numerous issues, such as a lack of irrigation, deteriorating soil health, disguised unemployment, fewer skill development opportunities, unreliable healthcare availability, low literacy rates, and increasing environmental degradation, among others. To address these diverse yet interconnected developmental challenges, the HDFC Bank, through its Corporate Social Responsibility (CSR) initiative 'Parivartan,' supports several projects that provide holistic rural development to help the rural population grow and prosper.

1.1 About HRDP

The goal of these initiatives is to promote sustainable socioeconomic and ecological development in order to guarantee the development of prosperous and content communities. The program's all-encompassing approach meets the needs of the communities by providing the essential inputs on matters like fostering economic independence through opportunities for skill development and livelihoods, delivering fundamental infrastructural development, and creating a better ecosystem that fosters better living conditions. It intends to bring about a socioeconomic transformation in the lives of the rural community by concentrating on the development of human capital, the management of natural resources, and infrastructure in poor and backward villages.

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:

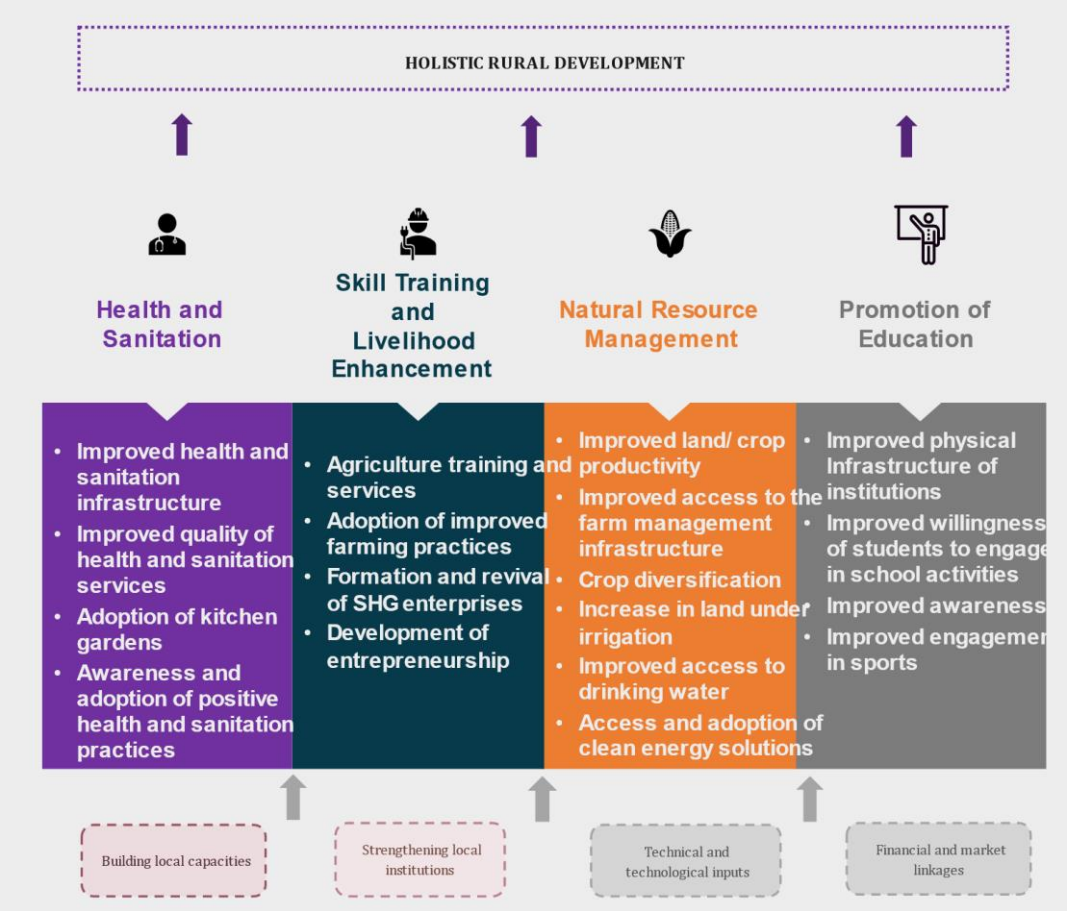
- Critically and objectively evaluate implementation and performance
- Determine reasons for certain outcomes or lack thereof
- Derive lessons learnt and good practices
- Provide evidence-based findings to inform future operational and strategic decisions while planning and funding partner organisations

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

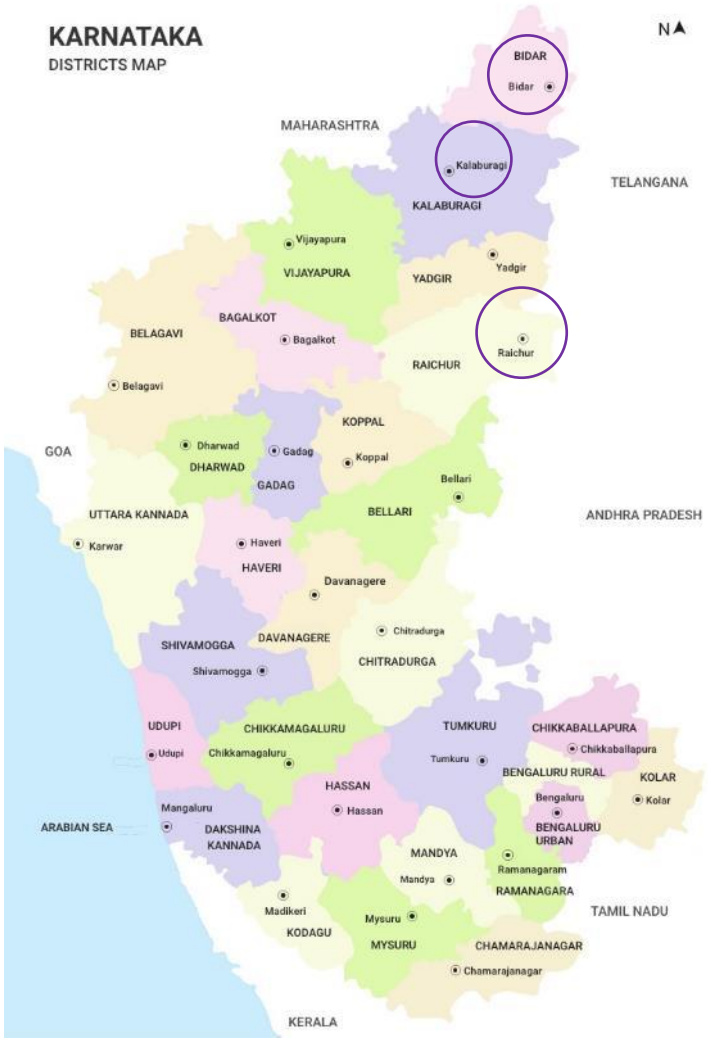
Figure 1: Conceptual framework of implementation



1.4 About the Project Area

The study was conducted in three districts of North Karnataka: Raichur, Gulbarga, and Bidar, covering a total of 16 villages. The three districts are economically backward, and each faced their own set of problems. These areas generally are drought-prone and face water scarcity. These areas are also agriculture-dependent, so interventions are based on the necessity of the community, after consulting with the village council. Along with clean energy, the HRDP promoted the management of farms and water resources as part of natural resource management. Under "Skill Training and Livelihood Enhancement," "Promotion of Education," "Health and Sanitation," and "Healthcare and Hygiene," the project also focused on agriculture training and support, self-help group (SHG)/women development, skill training, livestock management, and entrepreneurship development.) (See Figure 2)

Figure 2: Areas covered under the study (state map depicting areas covered under the study)



1.5 Partner Organisation – MYRADA

The Mysore Resettlement and Development Agency (MYRADA) is a non-governmental organisation that was established in 1968 to support the government's efforts to rehabilitate Tibetan refugees. After the Tibetan programme ending in the early 1980s, MYRADA turned away from relocation and started concentrating on the impoverished and marginalised in rural areas, which is where this profile starts. In the 1980s, MYRADA operated in 4 districts; today, it oversees

projects in 18 underdeveloped and prone to drought areas in Karnataka, Tamil Nadu, Puducherry, Andhra Pradesh, Telangana, and Maharashtra. By offering technical assistance and capacity building in areas of shared interest, it collaborates with governmental, bilateral, and multilateral programmes in other countries. The (Holistic Rural Development Program) HRDP has been implemented across 4 districts over two projects since 2019. The current project has been implemented across 3 districts—Gulbarga, Raichur, and Bidar, in 16 villages with the support of HDFC Bank Ltd.

They work to establish and strengthen community-based organisations (CBOs), support livelihood initiatives, manage and develop natural resources, enhance the community's health and educational status, and develop its capacity to independently develop and manage resources.

2 Research Design and Methodology

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

2.1 Criteria for Assessment

For each thematic area, activities completed by MYRADA 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 project 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 project.

To assess the impact and effectiveness of the project, the team established the values of outcome indicators of all thematic interventions. The findings were assessed against the outcome indicators finalized during the outcome harvesting stage. Through qualitative evidence and analysis of project outcomes (in light of variables identified in consultation with HDFC Bank), the team tried to understand whether and how the project impacted the lives of community members in the project 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 project 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 as well as in-depth interviews (IDIs), Key Informant Interviews (KIIs) and Focused Group Discussions (FGDs) with project beneficiaries, the MYRADA team, and the HDFC Bank project team. IDIs were conducted with a Gram Panchayat member and an Income Generating Practices (rural enterprises) beneficiary in Raichur; a school principal of Ilhal school, driving training beneficiary in Bidar; a floriculturist, and a poultry beneficiary in Gulbarga. FGDs were conducted with farmers group, SHG group, CMRC group, federation group, goat bank group, and with the general population. KIIs were conducted of the Project head at MYRADA, organic farmer, trainer of driving school, and two successful women entrepreneurs. 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. The details of the qualitative and quantitative data collection events made are given in the next section.

Figure 3: A general FGD in progress

Secondary data sources included HDFC's CSR Policy, Programme Log Frame (Logical Framework Analysis), Quarterly Progress reports, Project implementation timelines, Communication, and Documentation products, and other relevant reports/literature related to the project.

2.3 Sample Size and Distribution

From the 16 villages of the three districts where the project was implemented, three villages per district were selected based on the number of beneficiaries available. The beneficiaries were selected using purposive random sampling from a list of beneficiaries obtained from MYRADA. 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 were instances where a single beneficiary received multiple benefits and support across the four thematic areas. Inclusion of beneficiaries for all thematic areas was ensured. The target sample size across nine villages was 400, out of which 406 sample respondents were reached. The thematic areas wise sample covered was as follows (see Table 3, Table 4).

Table 3: Quantitative Sample Covered

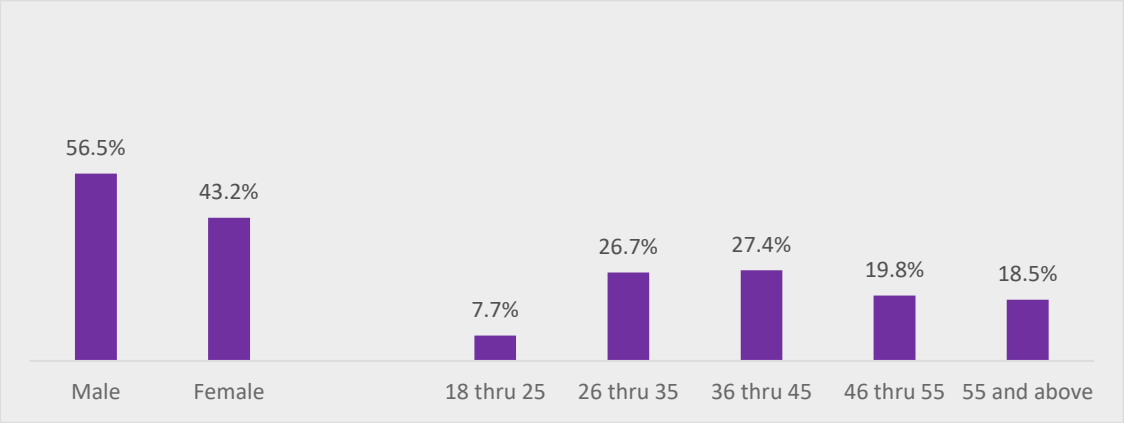
District	Total Households	NRM	Skill Training and Livelihood Enhancement	Health and Sanitation	Promotion of Education
Gulbarga	134	97	81	88	45
Bidar	134	126	73	126	103
Raichur	137	111	108	137	85
Total	405	334	262	351	233

Table 4: Qualitative Sample Size Covered

District	FGDs: 8		IDIs: 8		
	VDC	*Community*	*Headmaster*	*Village Head*	*Micro enterprise*
Gulbarga		3			3
Bidar		3	1		
Raichur	1	3		1	1
Total	1	9		1	4

Planned	1	9	1	1	4

Figure 4: Gender-wise and age-wise distribution of the sample (n=405)



The sex ratio in Karnataka is 968 to 1000 (2011 India Census). This is reflected in the number of beneficiaries in this area, as proportion of **women reached is lower (43.2%) as compared to men (56.5%). The youth population (18-45 years)** constituted the majority of beneficiaries **(62%),** The more older age group **(45 to more than 55 years of age) constituted about 38 percent** of the respondents.

The quantitative and qualitative sampling methodology has been explained in detail (see page 49).

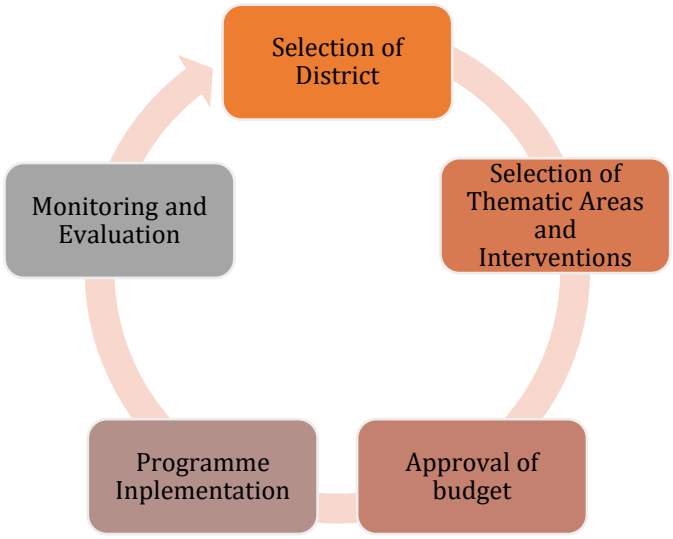
2.4 Training of Enumerators

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

3 Review of Project Planning and Implementation

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

Figure 5: Planning and Implementation Process



3.1 Selection of Project Area

The Hyderabad Karnataka region in Karnataka state, comprising districts like Bidar, Gulbarga, and Raichur, has consistently been identified as a backward area with poor socio-economic indicators. The districts face challenges such as being dryland and drought-prone regions, migration, illiteracy, inadequate infrastructure, lack of industrial development, and low human development index scores. In Gulbarga district, rural literacy is only 43.1 percent, and female literacy is as low as 29.4 percent (2011 Census). The majority of the population is engaged in agriculture, with small, marginal farmers and agriculture laborers earning low incomes. There is also a lack of basic infrastructure, healthcare, and educational facilities in the villages. Similarly, Raichur district suffers from low literacy rates, especially among rural females, and is industrially backward despite possessing abundant natural resources. The district faces high infant mortality rates and challenges in agriculture due to irregular monsoons and poor market linkages.

The project by HDFC Bank and MYRADA aimed to address these issues through a holistic and integrated approach. The project focuses on empowering the communities in four sectors across livelihoods, agriculture and natural resource management, health and sanitation, and education. The selected panchayats in backward taluks of Gulbarga, Raichur, and Bidar are strategically chosen for the project based on their socio-economic criteria and proximity to operations. Through this integrated development approach, the project seeks to uplift the communities and bridge the basic development gap in the region, aiming for sustainable growth and improvement in human development indicators.

Figure 6: Rain water harvesting awareness mural under HRDP in Raichur

3.2 Selection of Thematic Areas and Interventions

Considering the above challenges in the area, HRDP interventions focused on promoting water and farm management in addition to clean energy. The project also focused on agricultural training and support, skill training, livestock management, and entrepreneurship development under ST&LE; educational institution development and education support under PoE; health awareness and sanitation practices under H&S. The activities specific to each village under the project 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 (see Table 5).

Table 5: Activities under Four Thematic Areas in Gulbarga, Bidar, and Raichur

Activity Category	Activities	Output Indicators
NRM		
Irrigation Management	Farm pond construction, drip irrigation	Income from agriculture
Water management-agriculture	Nala treatment, check dam construction, village tank desilting	
Farm Management	Mulching paper support, floriculture input support, pheromone traps, Fodder development Earthen bund	
Clean Energy	Solar home lights distribution, solar street lights	Clean energy
ST&LE		
Agriculture Training and Support	Application of organic manure, construction of vermi pits, timely application of fertiliser and insecticides, conservation agriculture practices	Access to Agriculture Training and Services
SHG-Based Women Empowerment	Establishing/reviving SHG, training for SHG members, establishing linkage with bank, establishing/expansion of SHG business, goat banks	Skill and Entrepreneurship Development
Entrepreneurship Development	Tailoring/ boutique, roti making machine, poultry, dairy development, training for business management, support for enterprise development	
Skill Training	Driving lessons for youth, skill development training in job-oriented programs, linkages with employers	

Livestock management	Provision of animals, vaccination service, livestock health service, livestock insurance	Livestock Management
H&S		
Health	Health clinic, health camps	Health Infrastructure and Services
Sanitation	Drainage system, household waste water soak pits, waste management plants, household/ community sanitation units (toilets/bathing enclosures), awareness campaigns such as mural paintings	Sanitation Infrastructure and Services
Kitchen Garden	Seeds, training, demonstrations, Fertiliser and pesticides	Kitchen Garden
Drinking water	Jalminar	Drinking Water
PoE		
Educational Institutions Development	School building renovation, BaLA, construction/ repair of separate washrooms for girls and boys, classroom furniture, science lab equipment/ 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 sprinklers as farm inputs and implements, along with raising awareness about new agricultural techniques. The program's interventions are chosen on an annual basis, and a budget is allocated each year based on a request made to HDFC Bank by MYRADA. 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 their needs.

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 determine the most pressing problems and requirements of the communities, the initiative held Grama Sabhas meetings and Participatory Rural Appraisals (PRA) in 16 villages. These requirements were used to create plans and budgets that complemented HRDP's objectives.

To spread knowledge of HRDP in the villages and to foster relationships with and support from the locals, the initiative hosted community gatherings. Other parties with an interest in the project, such as school committees, youth organisations, mothers' organisations, teachers, and volunteers, participated and helped.

Beneficiaries, Community-Based Organisations (CBOs), Grama Panchayat members, project staff, and other stakeholders were all given regular meetings and trainings. Participants' ideas and suggestions were included into the trainings, which were created and conducted by the KVK CIDORs team of MYRADA. 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.

The guidance and support that MYRADA staff provided to all parties was essential in enabling the timely implementation of activities. They efficiently generated reports, made frequent site inspections, received input, and tracked progress.

3.4 Monitoring and Evaluation

The implementing partners used a standard monitoring and evaluation approach for the HRDP. These include reporting on project execution status to the HDFC Bank on a regular basis. Furthermore, the HDFC bank's programme implementation staff visits the project communities at regular intervals to review the project work sites. Participate in training programmes and awareness workshops, as well as connect with project recipients.

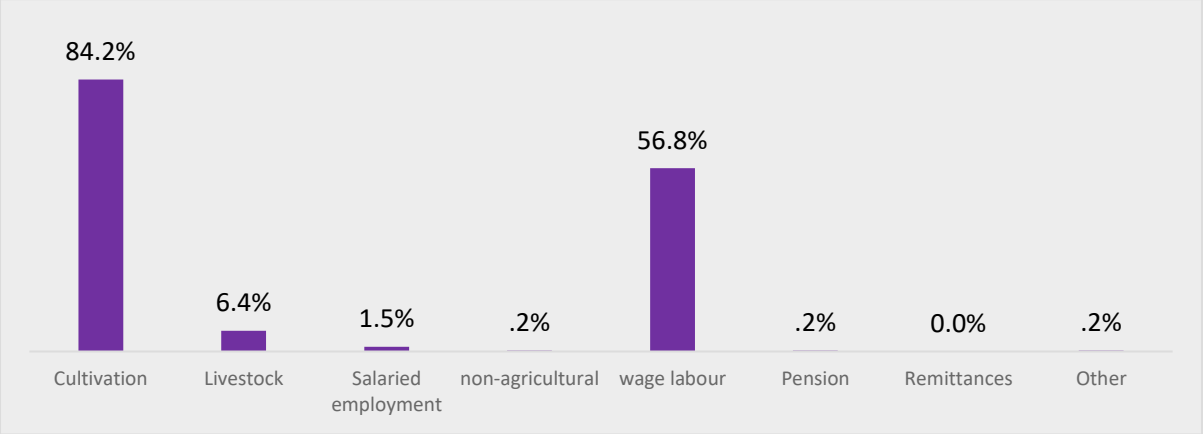
HDFC Bank has specific requests for project information from the implementing partner. The implementing partner manages the project data mostly in spreadsheets, which include information of the village-level activities conducted, beneficiaries mapped against each of the project activities, expenditures, and so on. In addition, the implementing partner submits to HDFC Bank a yearly progress report on project activities, as well as a strategy for the following year. This document is the primary source of information, providing an overview of the actions carried out, outputs produced, and outcomes attained.

The impact of MYRADA activities was 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 (0) based on selected indicators. The impact (Table 11) of each activity has also been calculated and classified as high, medium, or low impact. The annexure goes into greater detail on these.

4 Study Findings

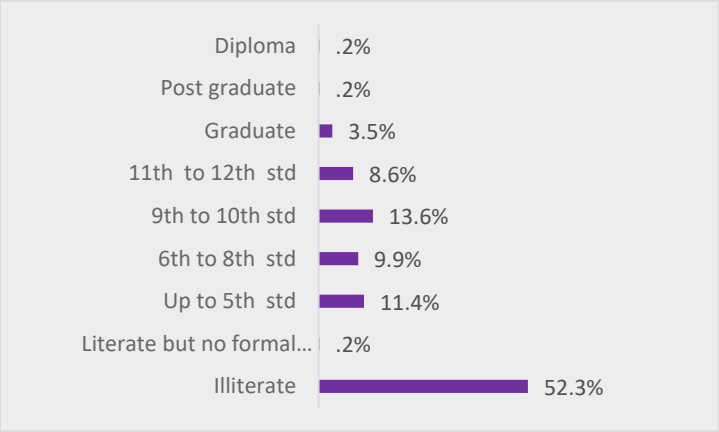
This section provides the analysis of the profile of the respondents covered in the nine villages of three project districts in Karnataka.

Figure 7: Income Sources of the Respondents (n=405)



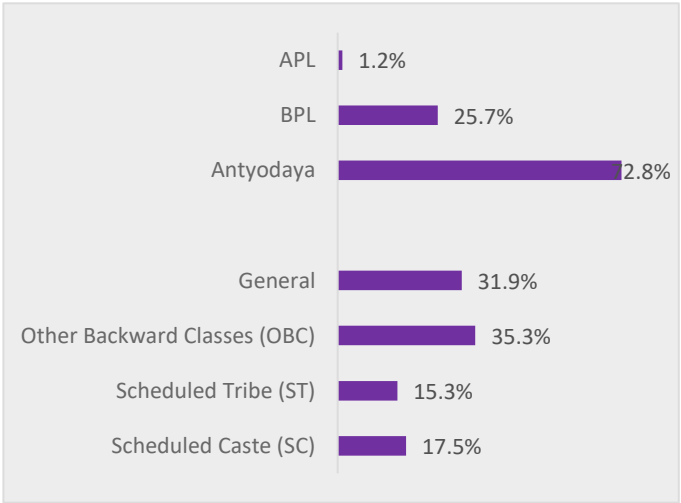
The income earned by a vast majority of the respondents comes from agriculture (84.2%), while 57 percent of the respondents are wage labourers. Other sources of income are far lesser seen.

Figure 8: Education status of the respondents (n=405)



Literacy rates in these districts ranges between 60 and 71 percent (2011 India Census). This is reflected in the educational status of the respondents, with **more than half of them (52.3%) being illiterate.**

Figure 9: Caste and income categorisation (n=405)



SC, ST and Other Backward classes comprised 68 percent of the total sample, while the general category comprised of 32 percent of the respondents. The region is extremely poor and backward, as 73 percent of the respondents hold antyodaya cards. Interventions to help improve their lives was a desperate need.

The following table provides a summary of the quantum of activities carried out under each activity category of the four thematic areas (see Table 6).

Table 6: Summary of Quantum of Activities Under Each Activity Category of Four Thematic Areas

Activity Category	Activities	No. (as provided by the Implementing Agency (IA)) between 2021-22
NRM		
Irrigation Management	Farm pond construction drip irrigation	62 32
Water management-agriculture	Nala treatment check dam construction village tank desilting	17000 cum 10 Not available
Farm Management	Mulching paper support floriculture input support Pheromone traps Fodder development Earthen bund	32 10 1600 160 500 ha
Clean Energy	Solar home lights distribution solar street lights	500 Not available
ST&LE		
Agriculture Training and Support	Farmers exposure visit to KVK/ Krishimela- Application of organic manure construction of vermi pits timely application of fertiliser and insecticides conservation agriculture practices	320
SHG-Based Women Empowerment	Capacity building of SHG- Establishing/reviving SHG training for SHG members establishing linkage with bank establishing/expansion of SHG business goat banks	150 6
Entrepreneurship Development	Support for Entrepreneurship- Tailoring/ boutique, roti making machine, dairy development poultry training for business management support for enterprise development	32 64 Not available Not available
Skill Training	Driving lessons for youth skill development training in job-oriented programs linkages with employers	Not available
Livestock management	Health camps- vaccination service livestock health service livestock insurance	16
H&S		
Health	Health clinic health camps	Not available 6
Sanitation	Drainage system household waste water soak pits waste management plants household/ community sanitation units (toilets/bathing enclosures) awareness campaigns such as mural paintings	Not available

Kitchen Garden	Seeds training demonstrations Fertiliser and pesticides	80 (all included)
Drinking water	Jalminar	1
PoE		
Educational Institutions Development	School building renovation BaLA science lab equipment/ Smart class	6 16 1

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

4.1 Natural Resource Management

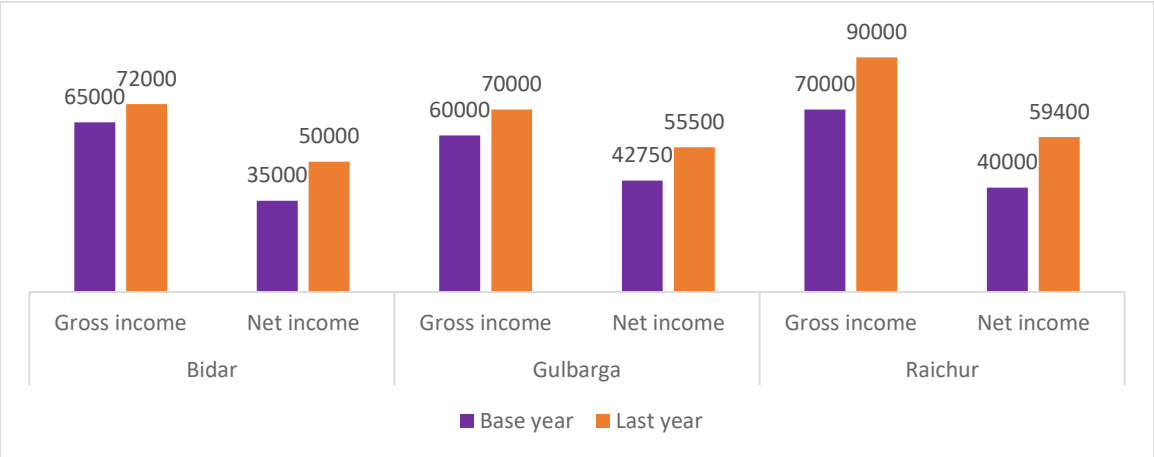
Under NRM, water conservation and farmer support for better yield were prioritized. The several trainings on improved farming techniques and exposure visits have resulted in better productivity and increased income from agriculture. This was important in the area as water scarcity is a common event. More than 500 school children each year have received solar home lights to be able to study at home. The number of beneficiaries is mentioned in the above table (Table 6)

The objective of NRM interventions was to improve land/ crop productivity and ultimately increase farmers' agricultural income through increased access to farm management infrastructure and irrigation mechanisms. The aim also was to raise the adoption of clean energy solutions. The sections below focus on the impact created with regard to these objectives.

4.1.1 Income from Agriculture

In recent years, there has been a notable rise in the agricultural income in the project areas. The net income increased from Rs. 35,000 to Rs. 50,000 in Bidar, while in Gulbarga, the net income significantly increased from Rs. 42,750 to Rs. 55,500. The gross income in Raichur increased significantly from Rs. 70,000 to Rs. 90,000, and the net income rose from Rs. 40,000 to Rs. 59,400. The project's success in enhancing productivity, enhancing agricultural practices, and contributing to the overall economic well-being of the farming communities in the region is highlighted by these positive changes in agricultural income. Overall, households have reported a 28 percent increase in the gross income from agriculture. **Upon conducting a two-sample z-test, P-value of 0.0133 was found against a z-statistic of 3.21 (at 95% confidence level) indicating that it is a significant change.**

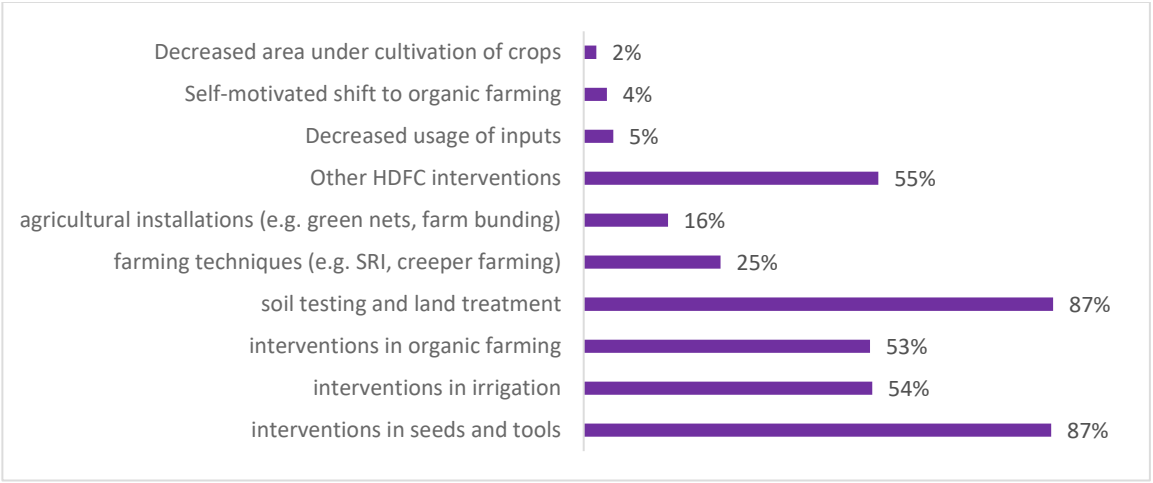
Figure 10: Increase in Agricultural Income (in Rs.) (n=303)



Note: Net and Gross Income in Rs. (based on median)

It can also be noted that nearly 83 percent of the respondents have reported that there has been a decrease in input cost. Most of the decrease in input cost could be attributed to the various interventions that were implemented by MYRADA and HDFC Bank, as indicated in Figure 11.

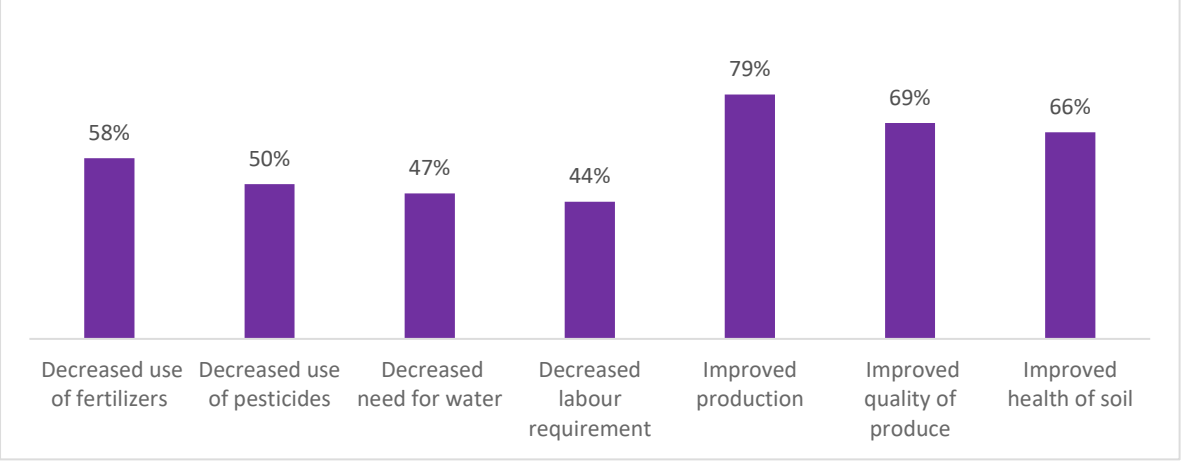
Figure 11: Reasons for decrease in input cost (n=255)



Upon interaction with farmers and farmer groups, it was found that the interventions related to irrigation (farm pond construction, nala treatment, check dam construction) were the most helpful in these areas, as the community faces severe drought during the dry seasons, more than three-quarters of the year. Several farmers have begun organic farming with support from MYRADA and HDFC Bank, but they are yet to see more positive results. According to them, they are already seeing better quality of yield.

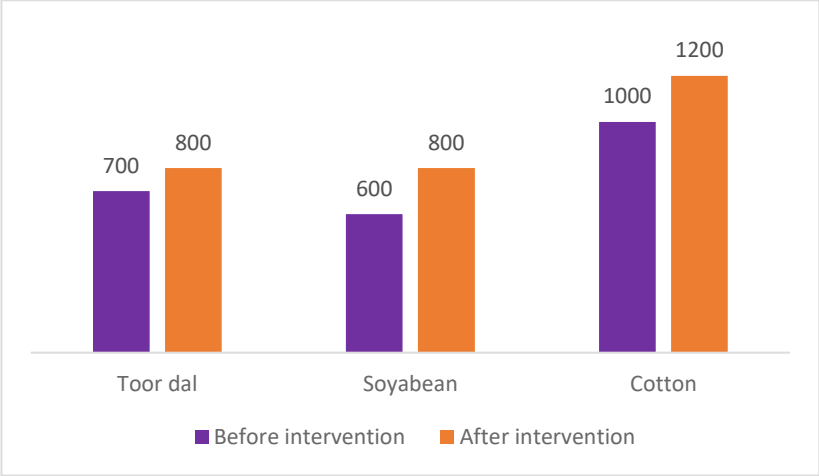
More than 85 percent of the respondents indicated a decrease in usage of chemical fertiliser, which is supported by quantitative data. Additionally, nearly half of the respondents said they use organic fertilisers. Of them, 50 percent use azolla to create their own fertilisers, and more than 65 percent use the vermi-composting method. Nearly half of these farmers received financial assistance to set up their units, and the majority of them received training in these techniques for producing natural fertiliser. The farmers have also expressed their appreciation for the benefits of using natural fertilisers, as shown in Figure 12.

Figure 12: How has the usage of natural fertiliser helped? (n=229)



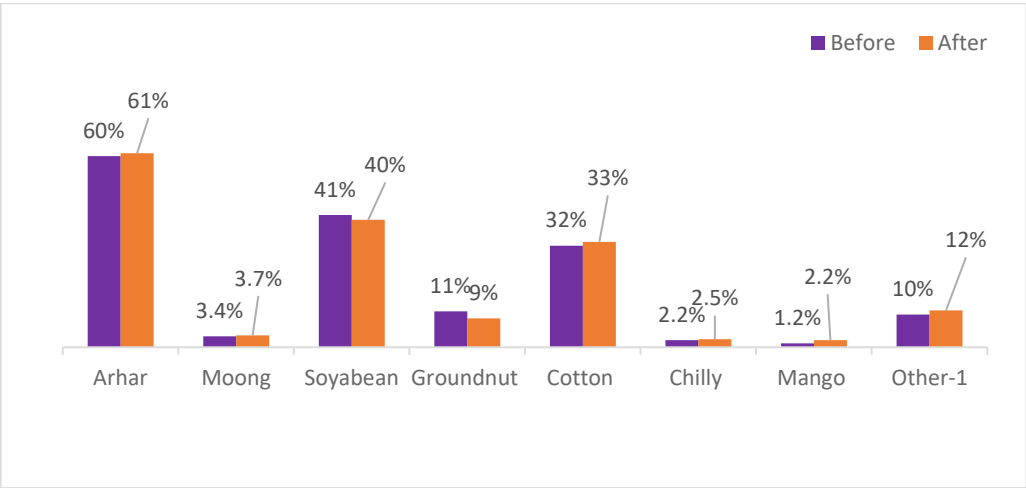
Farmers have reported an increase in production for the three main crops in this region: toor dal/arhar, soyabean, and cotton. The changes are indicated in Figure 13. Some of the main reasons for this change were found to be interventions seeds (87 percent), soil testing and land treatment (77%), and support in irrigation (47%).

Figure 13: Change in production of major crops (values in kgs) (n=192, 133, 102)



The project has had a slight yet positive impact on the proportion of farmers growing various agricultural crops. Arhar or toor dal was cultivated by 60 percent of farmers prior to the project, and 61 percent of farmers did so after it was put into action. Similar to this, there was a slight increase in the production of moong and soybean, with the percentage of farmers growing moong rising from 3.4 percent to 3.7 percent and soybean from 41 percent to 40 percent. However, the proportion of farmers growing groundnut fell from 11 percent to 9 percent and the proportion of farmers growing cotton from 32 percent to 33 percent. On the other hand, there was a rise in the number of farmers growing mango and chilli, from 1.2 percent to 2.2 percent, and from 2.2 percent to 2.2 percent for chilli. These changes highlight the project's success in promoting crop diversification and encouraging farmers to adopt new crops, contributing to the overall agricultural development in the project areas. Adoption of high-yielding flowers were also seen, but due to the small sample size, it was not captured in the qualitative data.

Figure 14:Crops Grown by Crop Diversification Beneficiaries Before and After HRDP Intervention (n=18)



4.1.2 Use of Clean Energy Solutions

The main interventions that were implemented under clean energy were installation of street lights, and provision of solar home lights, especially for school going children. The region receives an average of 4-10 hours of electricity per day. It becomes important to address this in the best capacity possible.

Figure 15: Uses of Clean Energy Solutions (n=220)

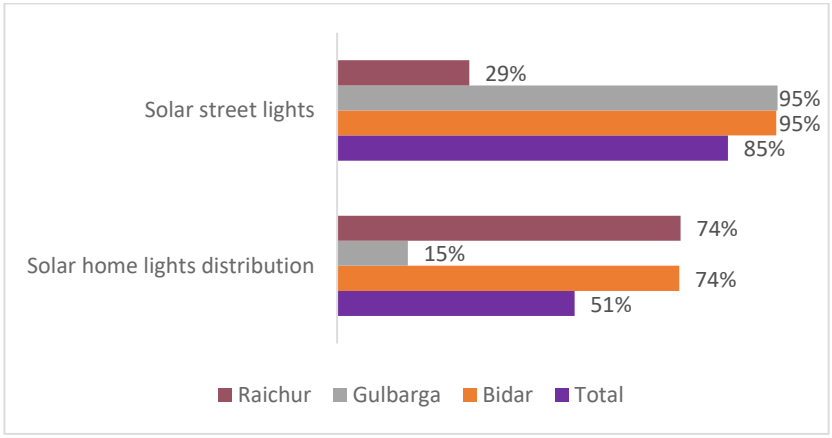
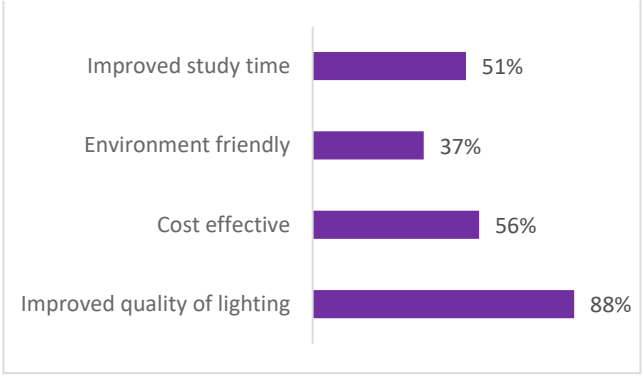


Figure 16: Perceived Benefits of Solar Lights (n=113)

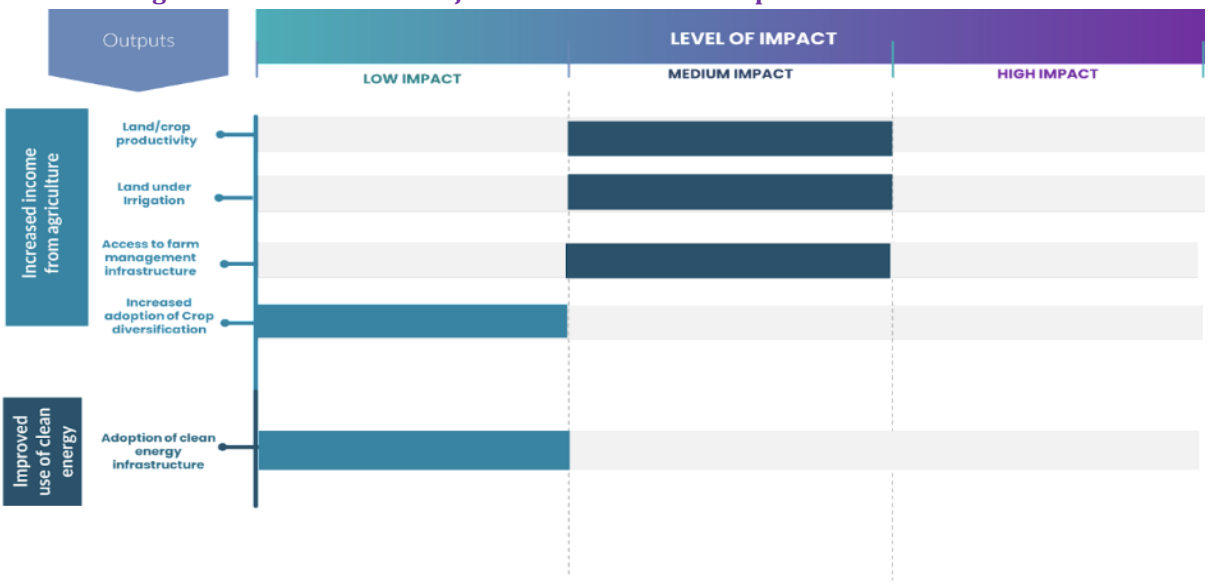


During interaction with the community, it was found that they were fully and very satisfied with the lights, as it helps the school-going children study better during the night time. Solar lights have also been helpful to the people. Quantitative data reflects the same. Figure 16 gives a more detailed note on how the solar lights have benefitted the community.

Figure 17: Solar street light

4.1.3 Impact Observation

Figure 18: Overview of Project Effectiveness and Impact of Interventions-NRM



Land and crop productivity, increase in land under irrigation and access to farm management infrastructure shown reasonable medium impact on the beneficiaries. Increased adoption of crop diversification show lower impact as it was limited to only farmers participated in the project rather than universally done in the project area. This made the new crop more prone towards pest attack and disease. Similarly, adoption of clean energy has seen low impact as it has reached fewer number of beneficiaries. The specifics of impact calculation can be seen in Table 11.

4.1.4 Case Study

Petals of Hope: How Roses Transformed a Farmer's Destiny

Image 1: Interviewing Mr. Chandrakant in his floriculture field

In the village of Hallisalgar, Gulbarga, Mr. Chandrakant, a determined floriculturist, faced challenges in earning profits from cultivating flowers like jasmine, marigold, and mulberry. With the support of MYRADA and HDFC Bank, he switched to growing roses on 1/3rd of his 2-acre land. Despite similar issues of price instability and transportation costs, the demand for roses proved lucrative, resulting in a remarkable 70 percent growth in Mr. Chandrakant's income. Last year, he earned an impressive net income of Rs. 1,00,000 solely from rose cultivation, compared to the Rs. 30,000 he earned before. Seeking further assistance, Mr. Chandrakant expressed the need for market linkages to reduce transportation expenses to the Alanda mandi, located 15 km away. He also suggested the formation of a farmer group or aggregation system to collectively address the transportation challenge. This collaborative effort could pool resources and reduce costs for floriculturists in the region. By fostering

a sense of community and camaraderie among local farmers, this approach has the potential to alleviate financial burdens and enhance their livelihoods.
Mr. Chandrakant's story exemplifies the transformative power of adaptability and support. By transitioning to rose cultivation and receiving assistance from MYRADA and HDFC Bank, he witnessed a significant improvement in his income and secured a brighter future for himself and his family. The success he achieved through his unwavering dedication inspires hope for other farmers in Hallisalgar, highlighting the potential of roses as a profitable crop. He suggested that with the implementation of a farmer group or aggregation system, the local floriculturists can further mitigate transportation costs, fostering sustainable growth and prosperity in the region.

4.2 Skill Training and Livelihood Enhancement

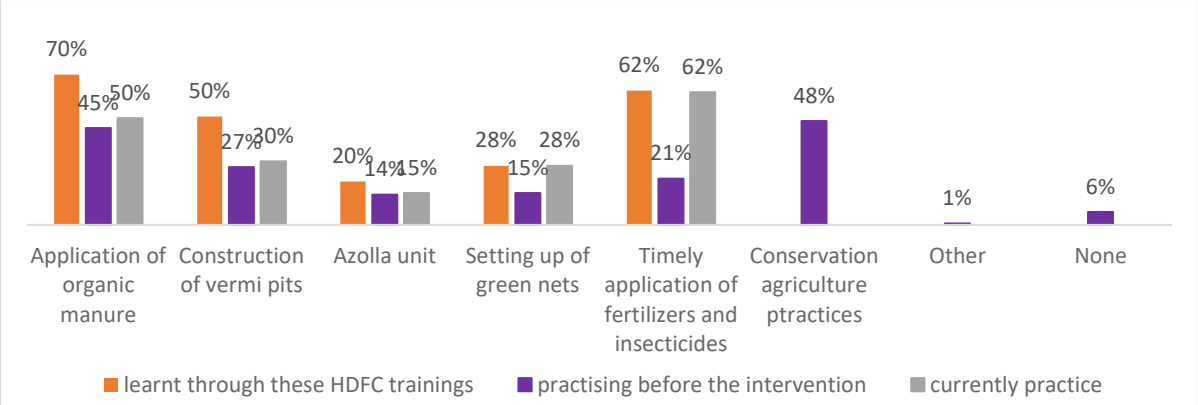
Under ST&LE, training has been conducted on several farming techniques: included but not limited to Application of, organic manure, construction of vermi pits, timely application of fertiliser and insecticides, and conservation agriculture practices. These have been well received by the farmers and seeing as a majority of the households' occupation is agriculture, these interventions were much required and useful. Women empowerment was another area that this project focussed on. By supporting women-led SHGs, providing them training and a means to earn and support their family, the women who were part of this project expressed their happiness at being able to afford school books and uniform for their children.

4.2.1 Agriculture Training and Services

The project carried out a number of initiatives to support sustainable agriculture. Application of organic manure, creation of vermi-pits, and azolla units all improved soil quality and promoted crop growth. Optimal crop protection and nutrition were ensured by the timely application of fertilisers and insecticides. Minimal tillage and cover crops were examples of conservation agriculture techniques that aided in soil conservation and water efficiency. These interventions enhanced agricultural sustainability and productivity, enhancing the livelihoods of the community and the environment.

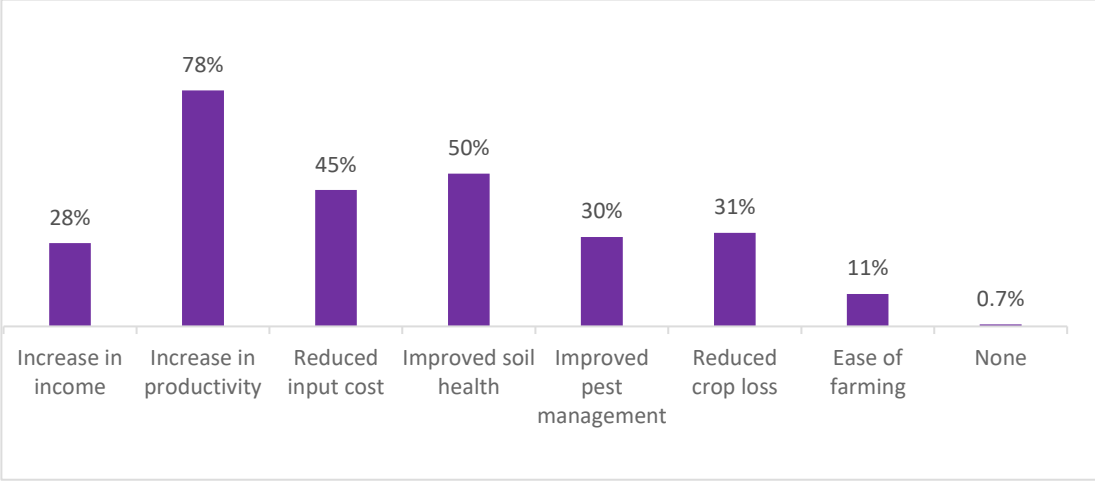
The community's adoption of sustainable agricultural practises has greatly benefited from the HDFC trainings. 50 percent of participants are currently using organic; 70 percent of those respondents learned about it through the trainings. Additionally, 30 percent of those who have learned about building vermi pits have used this method. 15 percent of participants have adopted the use of Azolla units, which 20 percent of the participants were taught. Furthermore, the same percentage of people who were taught to apply fertilisers and insecticides on time currently do so. 48 percent of participants adopted conservation agriculture practises.

Figure 19: Agriculture Practices Learned through HDFC Trainings and Currently Practicing (n=149)



Adoption of agricultural techniques has produced a number of perceived improvements in the community. These practises have a positive effect on crop yields, as shown by the 78 percent of respondents who reported an increase in productivity. Furthermore, 50 percent of respondents were pleased with the improved soil health, demonstrating the long-term advantages of sustainable farming practises. Additionally, 45 percent of businesses reported lower input costs, highlighting the financial benefits of effective procedures. For 30 percent of respondents, the use of these techniques has improved pest management, which has reduced crop losses (31 percent), as well. Also highlighting the financial advantages of these agricultural interventions, 28 percent of participants reported an increase in income. The median income increase after the adoption of these practices is Rs. 25000 per household.

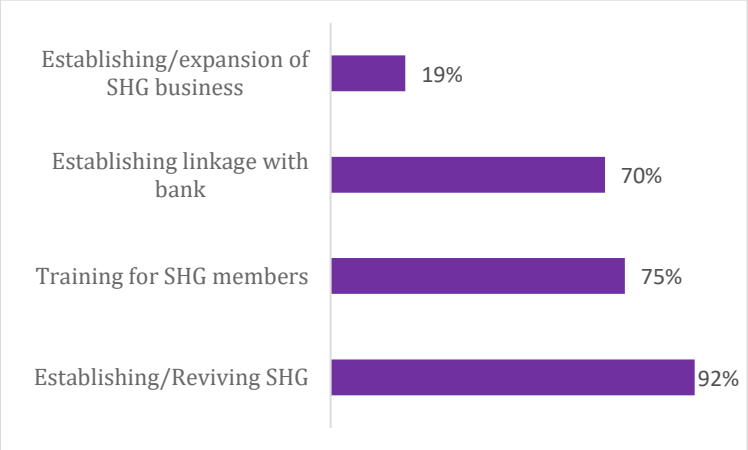
Figure 20: Perceived Improvements Due to Adoption of Agricultural Practices (n=149)



4.2.2 Economic Empowerment through Collectivization

About 19 percent of the sample respondents have received support for SHG development through HDFC. With the help of MYRADA, an impressive 92.4 percent of the SHGs have been either established or revived. Additionally, 74.7 percent of SHG participants have received training, giving them the necessary know-how and abilities for sustainable development. For 69.6 percent of SHGs, establishing connections with banks has been made easier, ensuring that their initiatives will have access to funding. Even though 19 percent of business owners have received support for starting or growing their operations, HDFC's overall assistance has been crucial in empowering SHGs and promoting socioeconomic development in the neighbourhood.

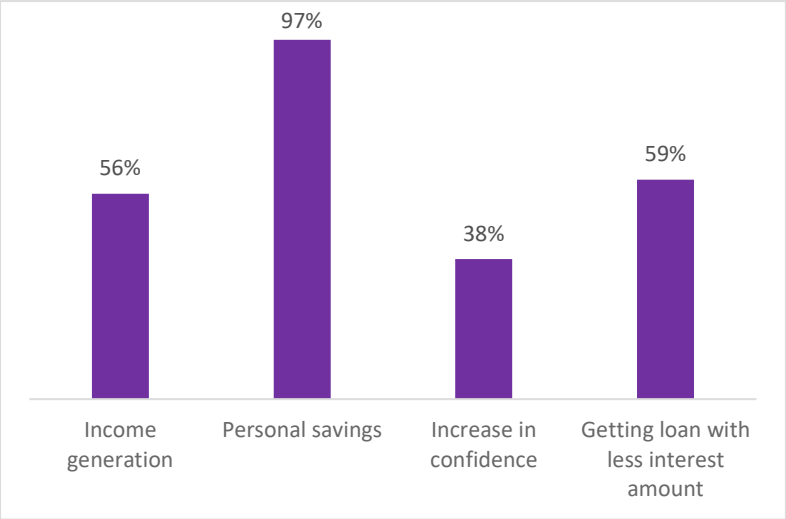
Figure 21: Support Provided for Groups through HRDP (n=79)



According to Figure 22, participating in a Self-Help Group (SHG) has many advantages for those involved. The fact that 97 percent of SHG members reported having personal savings shows improved money management and security. Additionally, 56 percent of the group saw an increase in income generation, demonstrating the beneficial effects of group efforts and entrepreneurial

opportunities. 38 percent of members' confidence levels have increased as a result of joining a SHG, enabling them to take an active part in civic and decision-making activities. Additionally, 59 percent of SHG members benefit from having access to loans with lower interest rates, which provides funding for various projects and individualised needs. SHGs' ability to offer support and group power has been shown to be crucial in promoting members' personal development and economic stability.

Figure 22: Benefits of being a SHG member (n=79)

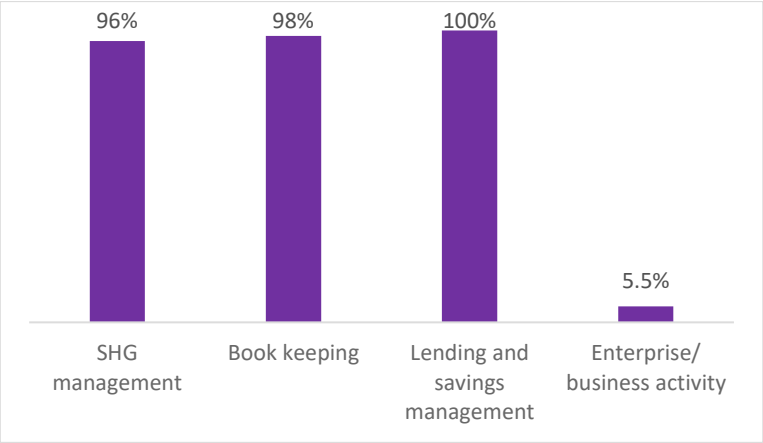


About 13 percent of the respondents have attended training sessions. According to the data, SHG members have actively participated in a variety of trainings. 96 percent of members showed up for training on SHG management, demonstrating their commitment to successfully managing and maintaining the group. Additionally, 98 percent of them received bookkeeping training, enabling them to keep precise financial records and track their progress. 100 percent of members participated in lending and savings management training, ensuring responsible handling of group funds and promoting a culture of saving. Even though a lower percentage of members (5.5%) took part in enterprise and business activity training, these interventions helped the members' entrepreneurial endeavours by teaching them useful knowledge and skills.

Figure 23: How has the SHG Trainings been useful (n=53)

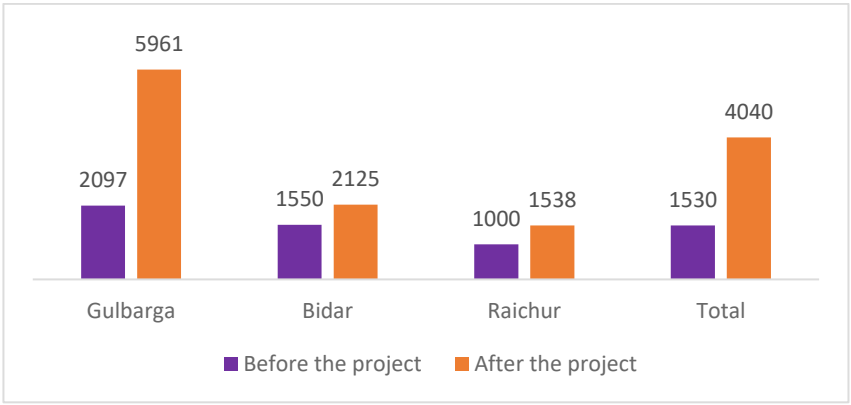
All of the respondents who received training reported that they were very useful. According to Figure 23, the training has improved their confidence greatly (92%), and about 36 percent of the respondents have reported that their awareness of financial management has also improved. These improvements have benefitted them greatly in gaining more confidence in running their own enterprise.

Figure 24: Training received from the project (n=55)



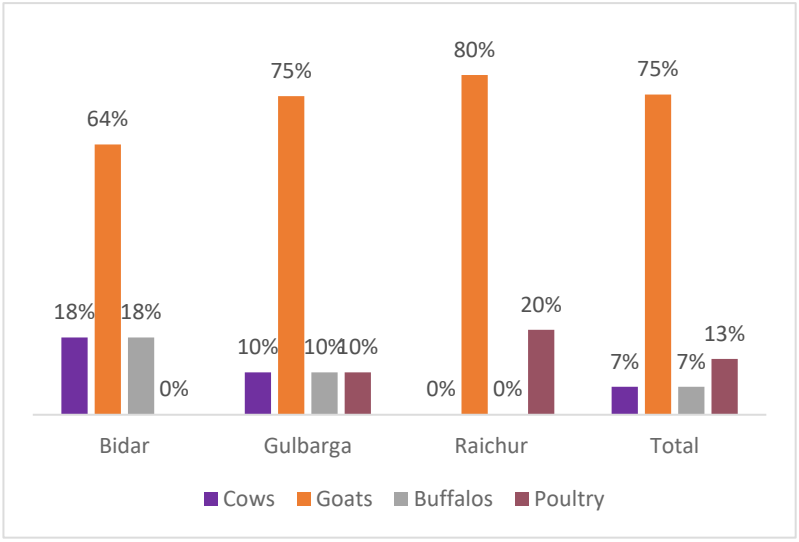
The Self-Help Groups (SHGs) saw a significant increase in income as a result of the project. Income rose from 2097 to 5961 in Gulbarga, from 1550 to 2125 in Bidar, and from 1000 to 1538 in Raichur. The project's success in fostering economic activity and empowering SHGs can be seen in the overall increase in total income from all regions, which went from 1530 to 4040, seeing an increase of 164 percent.

Figure 25: Average income from SHG enterprise before and after project inception (In INR) (n=15)



4.2.3 Livestock Management and Training

Figure 26: Proportion of households owning livestock (n=61)

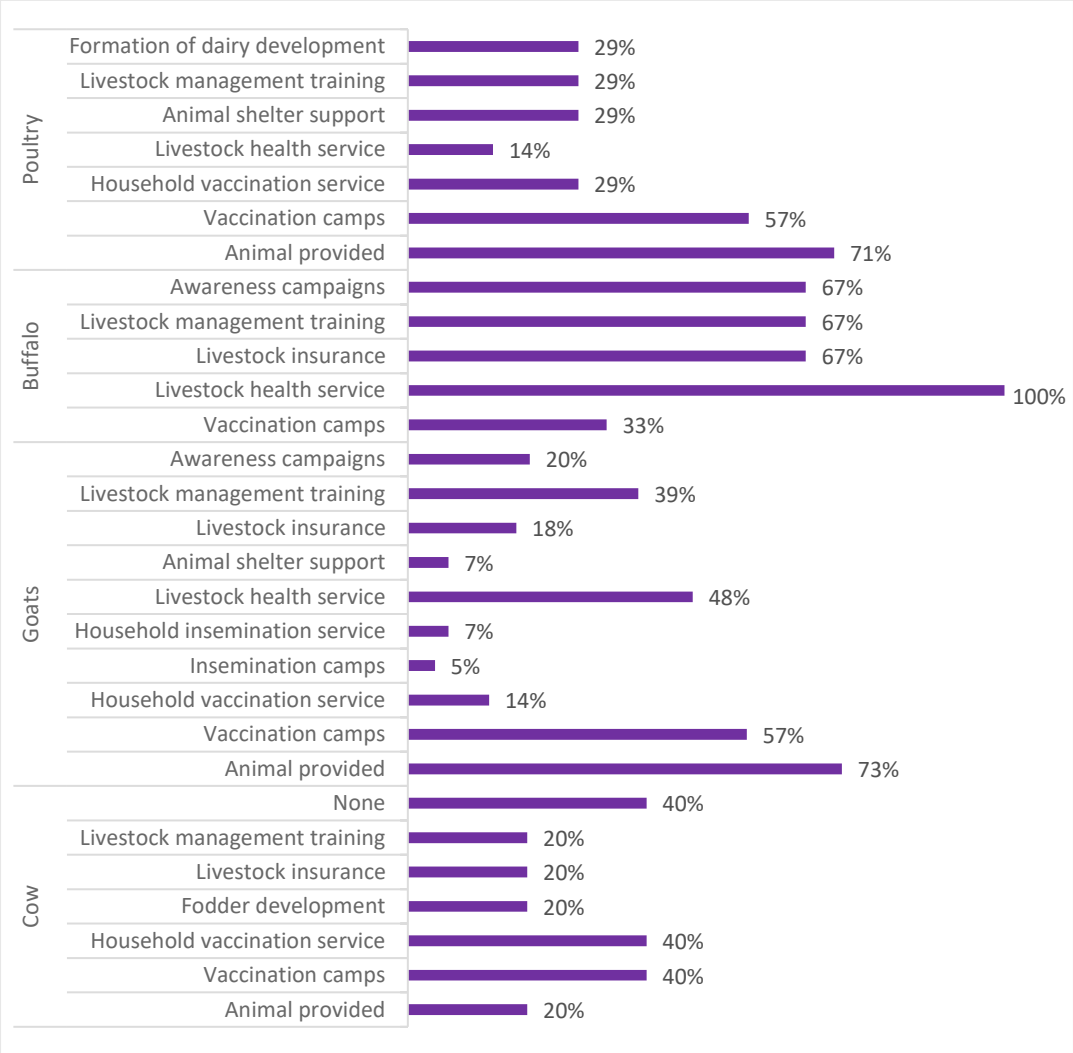


From Figure 26, it is evident that goats and goat rearing is a predominant livestock in the area. Alongside goats, poultry was also seen in some areas. Qualitative data reveals that poultry has been beneficial for the households in terms of improvement of nutrition.

Livestock services have significantly benefited the community. In the case of cows, 20 percent of households received animals, and 40 percent took part in vaccination clinics and home visits. 20 percent of households received each livestock insurance

and management training, while 40 percent did not need any of these services. Households received goats in 73 percent of cases, and 57 percent attended vaccination camps. 48 percent of households received services for livestock health, and 39 percent got management training. Regarding buffaloes, 33 percent of households received vaccination clinics, and 100 percent received livestock health services. 67 percent of households received training in livestock management and insurance, and 29 percent took part in awareness campaigns. 57 percent of households took part in vaccination camps for poultry, and 71 percent received animals.

Figure 27: Livestock services availed by the respondents (n=461)



Households with cows reported higher income and production in 33 percent of cases, while 67 percent saw a decline in livestock deaths, both of which improved quality of life and economic stability. Additionally, 33 percent increased their access to the market and business opportunities by learning crucial market information**. Households with goats experienced significant improvements as well; 57 percent saw an increase in income and 77 percent saw an increase in production, improving their financial prospects**. Additionally, 45 percent of respondents noted an improvement in the health of their livestock, which helped their herds. Buffalo-owning households saw outstanding results, with 100 percent reporting increases in household income, production, and savings, as well as 67 percent reporting improvements in the welfare of livestock and the quality of livestock output. Poultry-owning households saw gains as well; 57 percent reported increases in income and production as well as improvements in the

health of their livestock. Overall, these significant advantages have improved the welfare of livestock and their owners and positively changed the community's livestock-related aspects.

Figure 28: Primary benefits of livestock services (n=61)

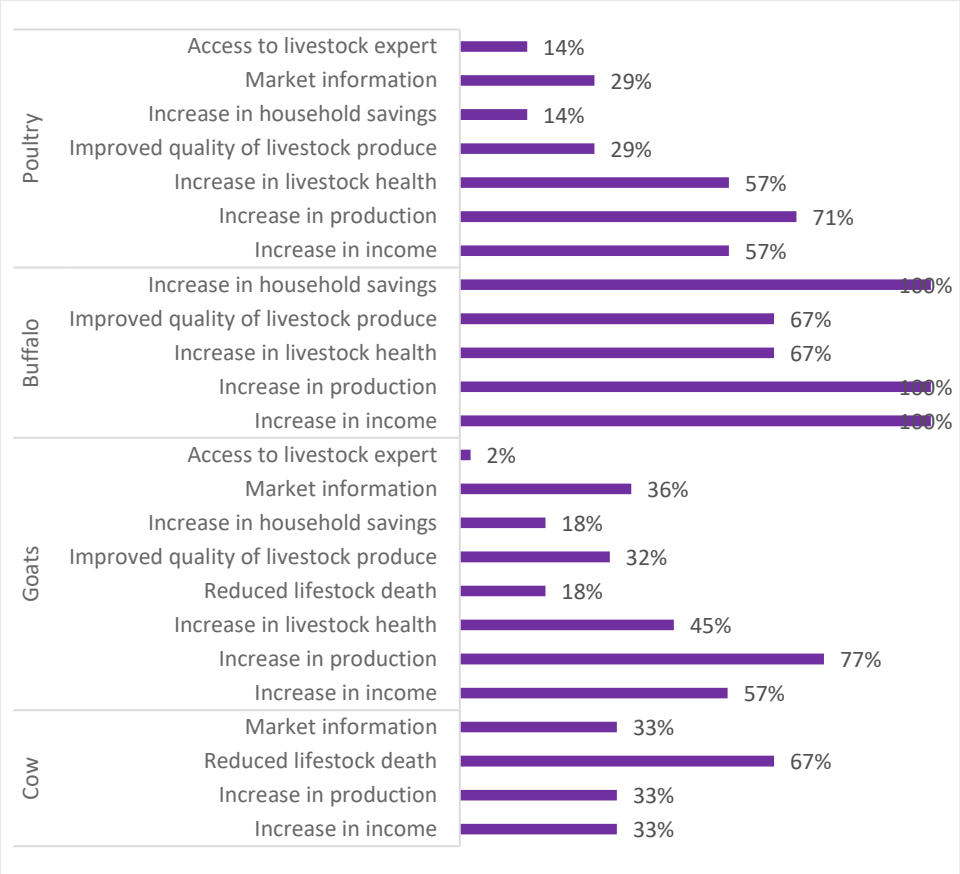
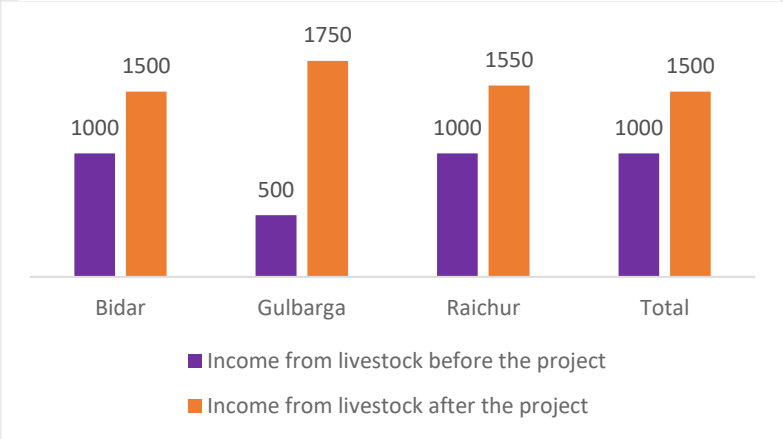


Figure 29: Change in income from livestock (based on median) (n=61)

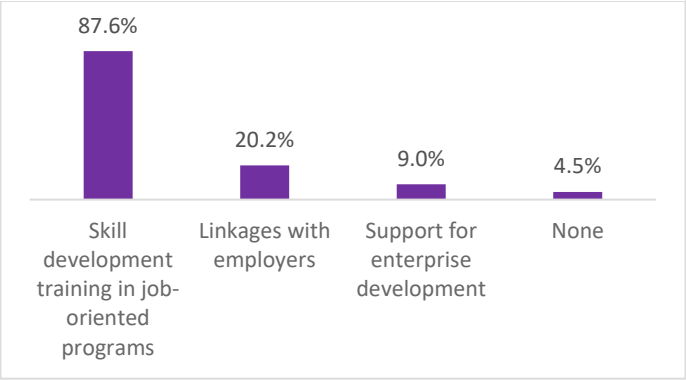


Households have reported that **about 30 percent of their total income is derived from livestock**. There has also been a significant increase in income from livestock, especially in Gulbarga, **where the median income from livestock before the project had been Rs. 500, and has risen to Rs. 1750,** indicating an increase of 250 percent.

The goat bank system was one of MYRADA's most innovative ventures. Three goats were given to each SHG and the elected members were responsible for caring for the goats, and after each goat has kids, the younger ones are distributed to the other members. This cycle continues until at least each member has their own goat. After speaking with SHG members from all three districts, it was discovered that in a few groups, the number of goats had grown from three to almost twenty over the course of four years. Women who are able to sell the goats for cash in an emergency have benefited greatly from this.

4.2.4 Skill and Entrepreneurship Development

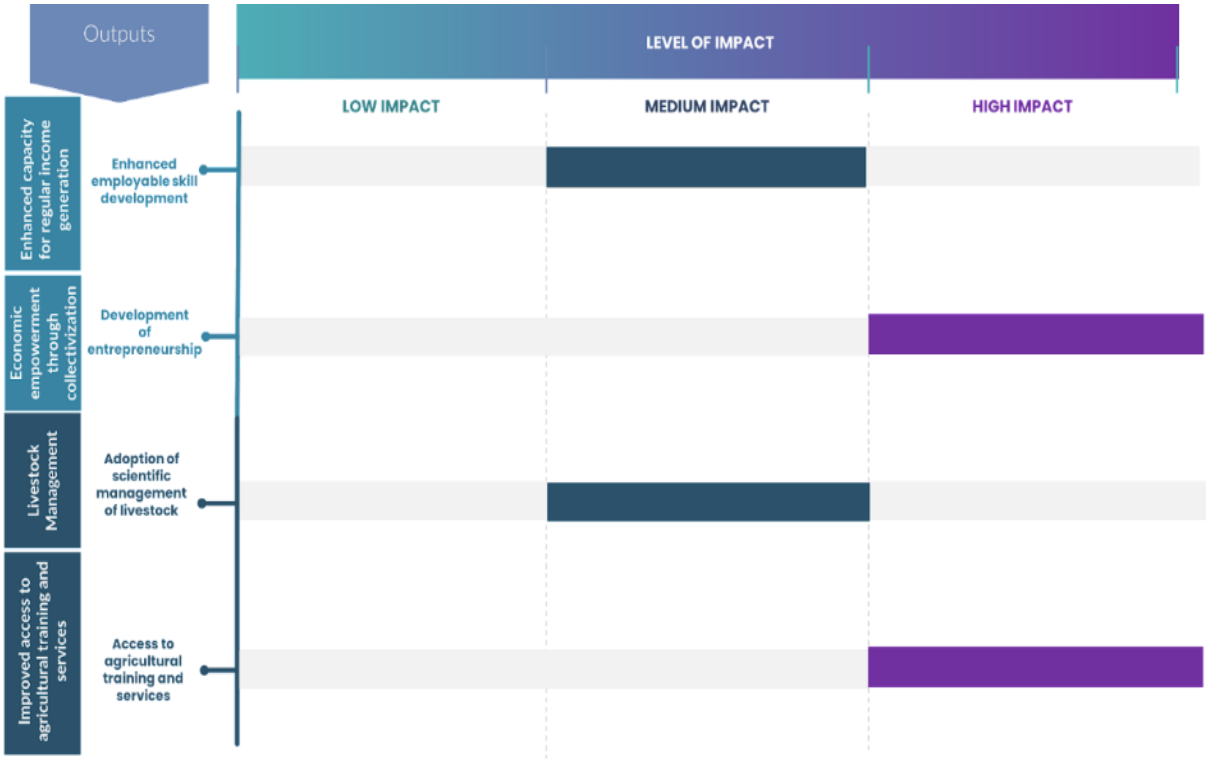
Figure 30: Skill and entrepreneurship development training services accessed through HRDP (n=89)



Most of the respondents (88%) have availed skill training for job-oriented programs. Most notably, training youths in driving (taxis and tractor) has seen significant success, although reaching such youths was not possible in our sample as they have moved away from their villages for work. Upon interaction with the trainer, Mr. Ismail, it was found that this training was well received by the youngsters. Support for enterprise development has been another notable support, which has helped women support their families financially. Women who were trained in tailoring were also supported by providing them with a tailoring machine to get a kick-start on their work. Several women were provided with chilli powder machines to be able to support their families. **Upon conducting a two-sample z-test on the households who have received skill training and have reported an increase in income, it was found that the increase in income was significant, as the P-value was 0.0128 at 95% confidence level at a z-value of 3.22. (Detailed calculation can be seen in Annexure C.)**

4.2.5 Impact Observation

Figure 31: Overview of Project Effectiveness and Impact of Interventions-ST&LE



Interventions in entrepreneurship and agriculture training services has seen high impact. This can be backed by the increase in income from both of these interventions. Employable skill development and adoption of scientific approach for livestock management have had a medium

impact on the beneficiaries as both requires continued practice and support to the farmers in improving it. The specifics of impact calculation can be seen in Table 11.

4.2.6 Case Study

Threads of Empowerment: Lalitha's Journey to Self-Sufficiency

Image 2: Mrs. Lalitha with her sewing machine

In the village of Mamadapura, located in Gulbarga, Mrs. Lalitha's life took a transformative turn thanks to the efforts of MYRADA and HDFC Bank. With a husband, mother-in-law, and two children to support, Lalitha's desire to contribute to her family's well-being led her to seize the opportunity offered by the tailoring training program. Eager to learn, she immersed herself in the art of sewing, gaining valuable skills that would pave the way for a brighter future.

Under the guidance of MYRADA and HDFC Bank, Lalitha acquired proficiency in various aspects of tailoring, from sewing blouses to undertaking alterations, saree zig-zag, and falls, among other tasks. Recognizing her dedication and potential, Lalitha was provided with a sewing machine, empowering her to put her skills into practice and generate income. With her newfound talent, Lalitha began earning an average of Rs. 2,000 to 3,000 per month, a significant contribution to her family's financial stability.

Lalitha's journey as a skilled seamstress brought immense joy and pride to her and her family. Her ability to provide for her loved ones and fulfil her responsibilities was a source of immense satisfaction. This newfound financial independence not only allowed Lalitha to meet the needs of her immediate family but also enabled her to fulfil a cherished dream – gifting her mother-in-law a gold necklace. The entire family revelled in the moment, basking in the pride and happiness that Lalitha's success had brought them.

Lalitha's story serves as an inspiring example of how access to training and resources can empower individuals to transform their lives. Through the tailoring program facilitated by MYRADA and HDFC Bank, Lalitha not only honed her skills but also became a vital contributor to her family's well-being. The sewing machine provided to her became a symbol of hope and self-sufficiency, enabling her to generate income and fulfill her dreams. Lalitha's journey is a testament to the power of opportunity and determination, illustrating how stitching threads of empowerment can lead to a brighter future for individuals and their families.

4.2.7 Case Study

Seeds of Success: Sangeetha's Journey from Labourer to Entrepreneur

Image 3: Mrs. Sangeetha outside her shed of machines

In the village of Jaffarwadi, Bidar, Sangeetha's life took a remarkable turn with the support of MYRADA and HDFC Bank. Initially working as a wage labourer, she had limited earning potential, making only Rs. 60 per day for three months a year. However, everything changed when she received a chilli powder machine through a Self-Help Group (SHG) supported by MYRADA and HDFC Bank. With determination and the unwavering support of her husband, Sangeetha embarked on a journey of entrepreneurship that would transform her life.

Armed with her new chilli powder machine, Sangeetha harnessed the opportunity to establish her own business. With access to electricity and a small shed for the machine, she began producing and selling chilli powder. Traveling either on foot or by bicycle, she personally marketed her product to hotels near Basavakalyan. Inspired by her initial success, Sangeetha reinvested her earnings, gradually expanding her enterprise. She purchased a flour mill, then another, and eventually acquired a vermicelli-making machine. Within three years, she had built a cement shed to accommodate all her machines, and even purchased a xerox machine – a rarity in her area.

Sangeetha's hard work and entrepreneurial spirit paid off, leading to a significant improvement in her income and lifestyle. From earning Rs. 18,000 per year as a wage labourer, she now earns approximately Rs. 15,000 per season (three months) from a single chilli powder machine. Collectively, her various machines generate an impressive income of around Rs. 20,000 per month during the summer season and Rs. 15,000 during the off-season. This newfound prosperity has allowed Sangeetha to provide a good education for her children, bringing her immense happiness and fulfilment.

Sangeetha's journey from a wage labourer to a successful entrepreneur showcases the transformative impact of access to resources and support. With the assistance of MYRADA, HDFC Bank, and the SHG, Sangeetha's determination, combined with her husband's unwavering support, propelled her towards self-sufficiency and prosperity. By diversifying her business and expanding her product offerings, Sangeetha was able to significantly increase her income and improve her family's quality of life. Her story stands as a testament to the power of empowerment and entrepreneurship, emphasizing the profound impact that income-generating practices can have on individuals and their communities.

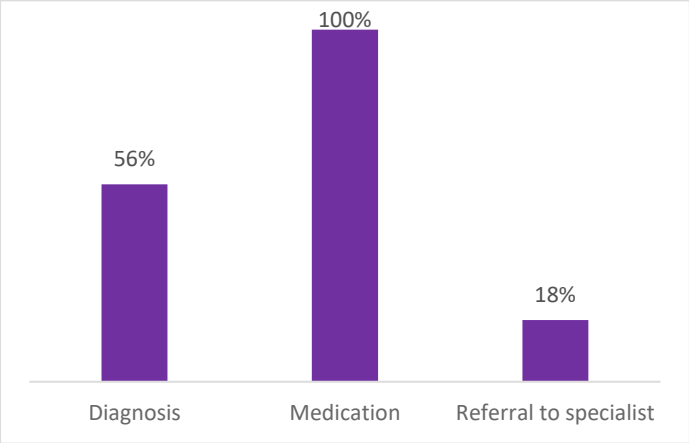
4.3 Health and Sanitation

More than 97 percent of the respondents have availed benefits under health and sanitation. Several interventions have been supported under Health and Sanitation, but the primary focus had been on NRM and ST&LE. Under H&S, a health camp was conducted every six months. Several households were also supported and encouraged to grow vegetables in their backyard for their household consumption.

4.3.1 Health Infrastructure and Services

Health clinics, health camps, and hygiene-related awareness sessions are interventions in the field of health. Twenty-eight percent of the respondents have used the health clinic, which was established and offers basic medical services. With an astounding 92 percent participation rate from respondents, health camps have demonstrated to be very successful in facilitating widespread outreach and the provision of healthcare. In addition, 37 percent of the community participated in sessions specifically designed to raise hygiene awareness. The improvements in healthcare access and raising public awareness of good hygiene practises are represented by these interventions.

Figure 32: Services availed at HDFC supported camps/clinics (n=395)



In health camps and clinics, all of the respondents received medication, while 56 percent received diagnoses and 18 percent were referred to specialists.

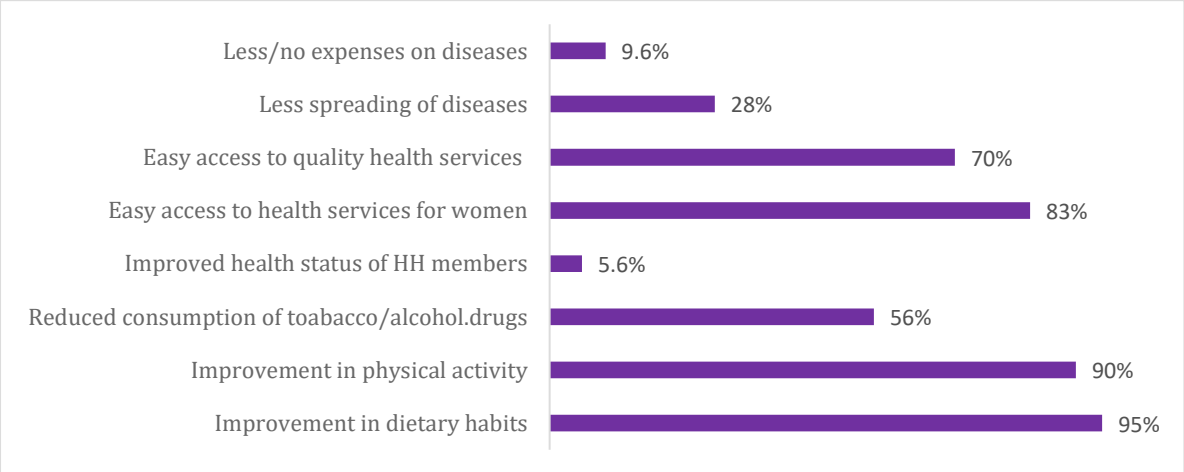
Awareness was also seen in the form of infographic murals, that was deemed imperative during the COVID-19 pandemic time.

Figure 33: Mural in Gulbarga on how to avoid the spreading of COVID-19

It was discovered, though, after discussion with the community, that more frequent health camps would have been beneficial.

The HDFC supported camps and clinics have brought about several perceived benefits for the community. 95 percent of the respondents reported that their eating habits had improved, indicating that there had been a significant improvement in dietary practises. Additionally, 90 percent of the respondents stated that they were becoming more active, which has contributed to a healthier way of life. The interventions have also helped 56 percent of the respondents cut back on their use of tobacco, alcohol, and drugs, improving their general health. Additionally, 83 percent of women can now access healthcare services more easily, ensuring their wellbeing. 70 percent of respondents agree that healthcare services are now more accessible and of higher quality overall. 9.6 percent of respondents reported a decrease or elimination in disease-related costs, while 28 percent saw a decline in the spread of diseases.

Figure 34: Perceived benefits of HDFC bank supported health camps/clinics (n=395)

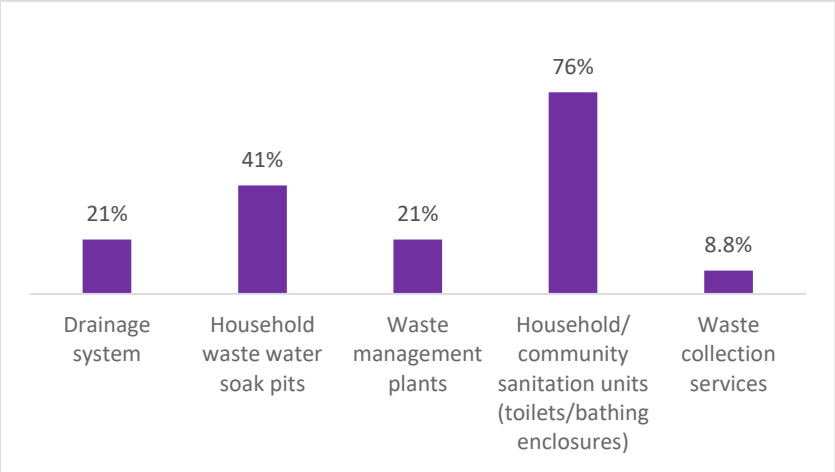


4.3.2 Sanitation Infrastructure and Services

Support in sanitation infrastructure and services were not a major intervention that was required in this area. Several toilets had been built as part of the Swacch Bharat Mission. MYRADA and HDFC Bank supported a few households in the repairment and building of toilets and soak pits by providing them monetary support, and has also installed community cement waste collection bins.

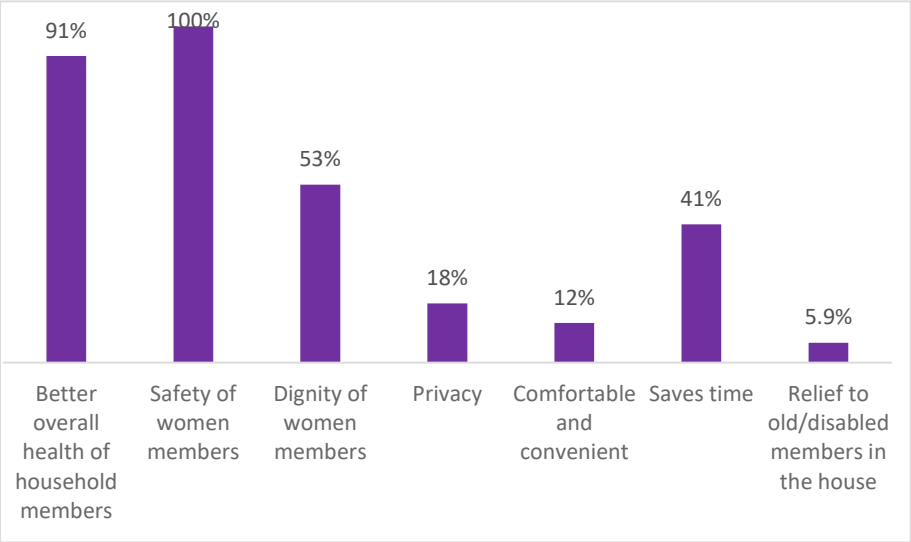
Figure 35: Community Waste Collection Bin

Figure 36: Proportion of households who have received sanitation services by HDFC bank (n=34)



Among the respondents, 21 percent reported having access to a proper drainage system, ensuring efficient wastewater management. Additionally, 41 percent of households now benefit from household waste water soak pits, which contribute to better waste disposal practices. The establishment of waste management plants has also served 21 percent of the community, facilitating effective waste treatment. Notably, an impressive 76 percent of households now have access to household or community sanitation units, such as toilets and bathing enclosures, significantly enhancing sanitation and hygiene practices.

Figure 37: Perceived Benefits of HH/Community Sanitation Units/ Waste Management Services (n=34)



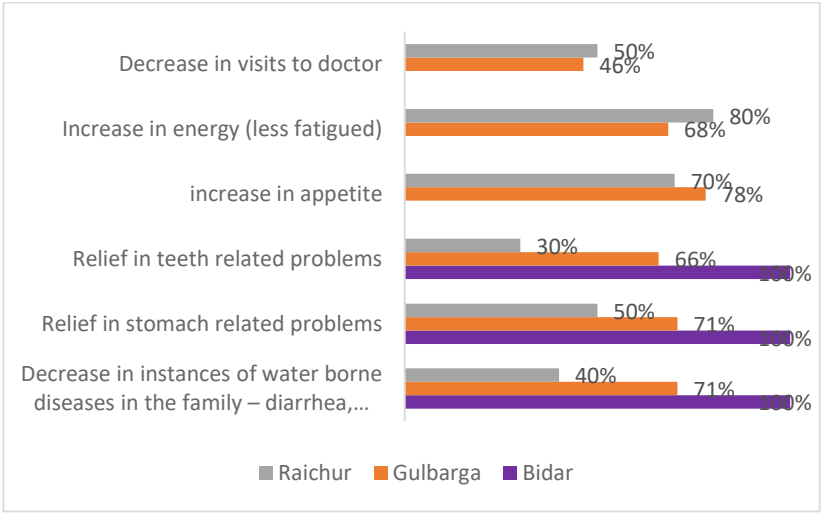
The implementation of sanitation services has led to significant benefits for the community, with 91 percent experiencing improved overall health. Due to these facilities, female members report feeling safer (100 percent) and more respectable (53%). With 12 percent claiming greater comfort and 41 percent finding time-saving benefits, sanitation is clearly convenient. Although only 18 percent of respondents reported privacy improvements, the overall effect of these advantages shows how important sanitation services are to promoting a healthier and safer living environment for the community.

4.3.3 Drinking Water

Even though access to clean drinking water was a top concern in this area, the interventions that were put in place have only had a small impact on the community. Only 15 percent of the respondents claimed that the source of their drinking water had changed. Interaction with the community also revealed that some areas did not implement drinking water interventions, despite their necessity.

However the scale of the intervention, it has impacted the community in a positive way, as indicated in Figure 38.

Figure 38: Perceived health benefits of improved drinking water sources (n=10)



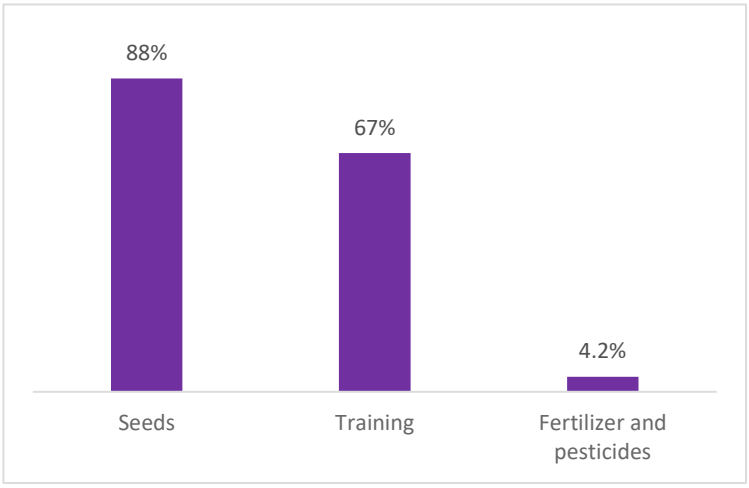
4.3.4 Kitchen Gardens

88 percent of participants in the kitchen garden project benefited from the distribution of seeds to start their gardens, which is crucial support for the project. Additionally, successful cultivation

is ensured by the 67 percent of the community who have received training to improve their gardening abilities. Only 4.2 percent, though, received assistance in the form of pesticides and fertilisers. Despite this, a sizable number of people have been able to successfully establish and maintain their kitchen gardens thanks to the provision of seeds and training. These initiatives support community improvement in food security, healthy eating practises, and self-sufficiency.

The respondents have mostly received seeds for growing potatoes, onions, and papayas, among other vegetables. The self-consumption of 29.2 percent of the produce results in the direct delivery of wholesome, fresh food to households. Another 29.2 percent is sold, providing the community with a chance to generate income. Furthermore, 41.7 percent of participants use the vegetables for both selling and self-consumption, ensuring a balanced approach to meeting dietary needs and boosting the regional economy.

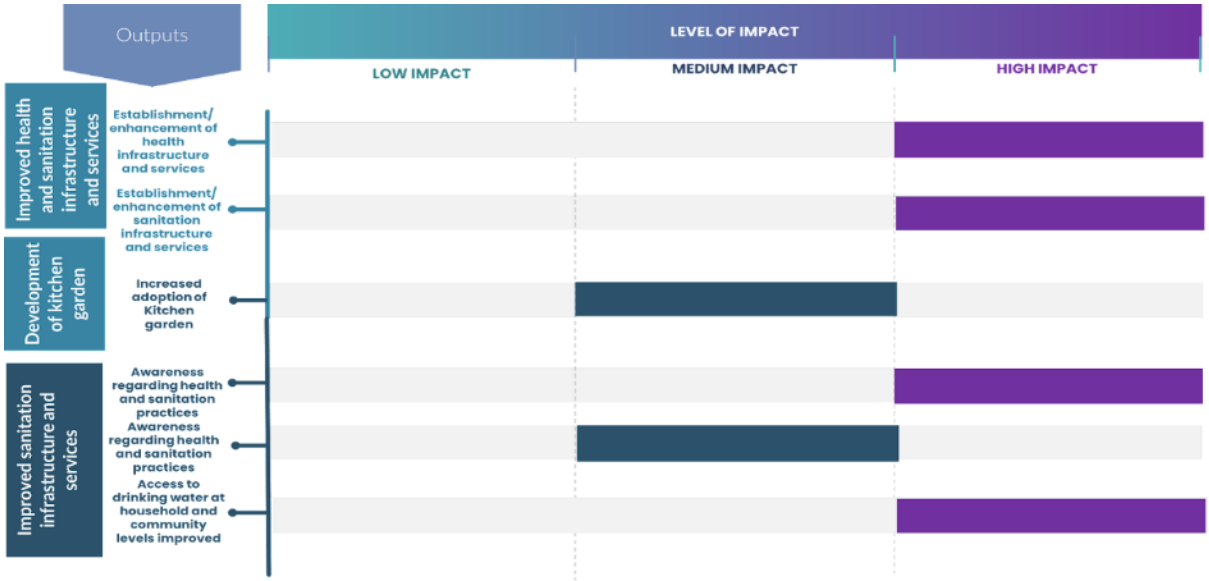
Figure 39: Project support received for kitchen gardens (n=24)



According to respondents, selling the produce from their kitchen gardens has brought in a median income of Rs. 1750 per month. However, the intervention had little varying effects on people's vegetable consumption. The consumption of vegetables has decreased, according to nearly half of respondents, while the other half also reported an increase. This could also be attributed to the small scale of the intervention.

4.3.5 Impact Observation

Figure 40: Overview of Project Effectiveness and Impact of Interventions-H&S



High impact has been seen when it comes to interventions in health and sanitation. Even though the scale of interventions was not as high as compared to ST&LE or NRM, it has still has helped the beneficiaries. The specifics of impact calculation can be seen in Table 11.

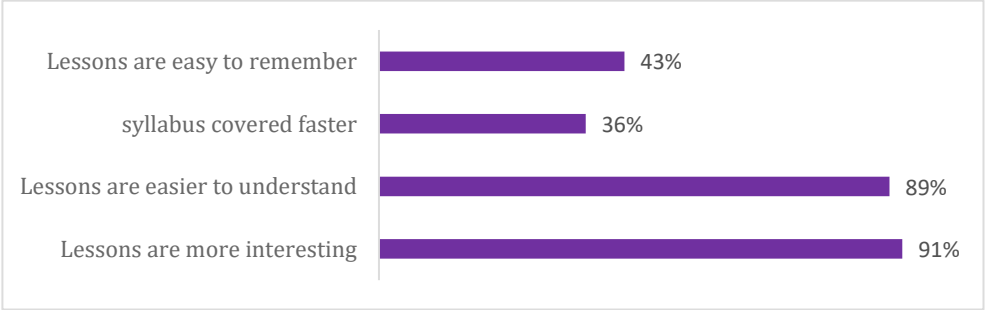
4.4 Promotion of Education

Under education, wall paintings or BaLA has been done in 16 schools across the three districts. Six schools have been renovated for a better learning environment. One of school Principals in a school ins Raichur expressed his satisfaction with the support provided by the project. "We received a monitor for the smart class, and lots of wall paintings in three of the classrooms for primary school children. The students are very happy with all of this, and they seem to want to learn more."

4.4.1 Infrastructure in Educational Institutions

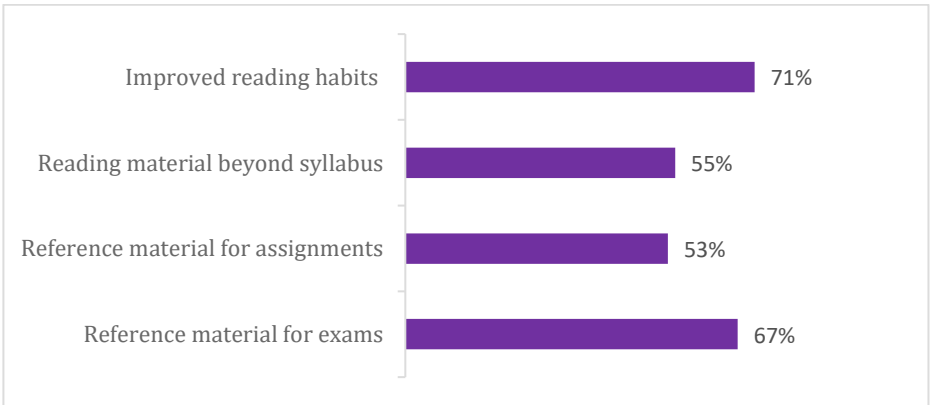
Smart classes were provided in some schools in the project villages. Learning materials and books for the school's libraries were also provided to the students. Students believed that smart classes offered a variety of advantages. Lessons were more engaging for 91 percent of students, and 89 percent said they could understand them better. Furthermore, 36 percent reported a quicker coverage of the syllabus, and 43 percent said it was simpler to recall the lessons. 100 percent of the students like using the smart class, and have reported that they are being used every day.

Figure 41: Perceived benefits of smart class (n=89)



Libraries were supported as part of the HRDP. Around 67 percent of individuals reported that it provided essential reference material for exams, aiding in their academic preparations. Moreover, 53 percent found the library to be beneficial for completing assignments, while 55 percent appreciated the availability of reading materials beyond the prescribed syllabus, enabling them to explore diverse subjects and expand their knowledge. Additionally, the library played a significant role in improving reading habits, as reported by 71 percent of users. The library has been used by the students almost every day.

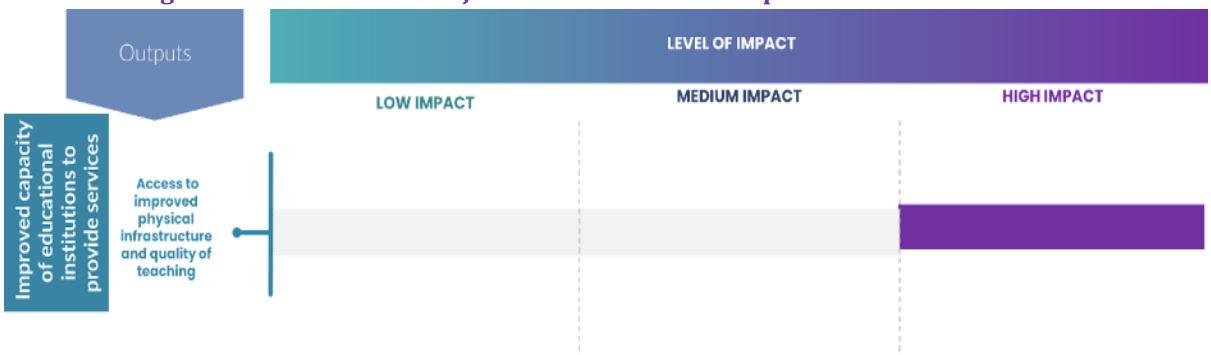
Figure 42: Perceived benefits of libraries (n=205)



Interventions in the education sector was limited to a few schools only. However, the interventions were received with enthusiasm.

4.4.2 Impact Observation

Figure 43: Overview of Project Effectiveness and Impact of Interventions-PoE



Although the interventions in education were fewer, it had high impact, as mentioned earlier. With time, the scale of intervention could have been increased, thus having a much wider impact on the school students and their learning. The specifics of impact calculation can be seen in Table 11.

In order to reach the greatest number of people possible, MYRADA and HDFC Bank have worked tirelessly across all sectors in this area. The project, however, was unable to realise its full potential as a result. The project could have gone on for a few more years, which might have had a more beneficial effect.

4.5. Holistic Rural Development Index

There are multiple dimensions involved in achieving the goals of rural development and the resulting blend raises agricultural production, generates new jobs, enhances health, increases communication, and provides better living infrastructure.

HDFC Bank adopted the Holistic Rural Development Index (HRDI) for evaluation of HRDP as it aims to achieve holistic rural development through a multitude of interventions that would lead to overall improvements across related dimensions. Therefore, the project introduced significant variability in interventions across districts. As such, it was not possible to ascribe a single impact indicator that might be able to accurately capture the overall performance of HRDP.

Since there was no baseline data available for this assessment, the Recall Method was used in the household survey to assess the change that beneficiaries experienced before and after project implementation. For this purpose, the enumerators were trained to ask beneficiaries to recall the value of critical indicators at the start of the project.

The impact indicators with baseline and endline data were selected and were assigned weights based on their relative contribution to the final expected outcome across all theme-wise interventions. While most of the indicators were found to be relevant for the study, a few needed modifications in accordance with the project, the study design and the information collected. The detailed methodology and indicators are explained in detail (see Annexure 0).

Table 7: List of Indicators Used to Calculate HRDI

NRM	Proportion of farmers with net income above median
	Proportion of farmers reporting increased productivity of three main crops above median (before and after)
	Percentage of farmers reporting access to irrigation
H&S	Percentage of households reporting increase in use of fruits/vegetables from the nutrition garden

	Percentage of households reporting increase availability of drinking water facility
	Percentage of households with access to improved toilet facility
Skill	Percentage of SHG members reporting income above median from rural enterprises
	Percentage of households who getting skill training & reporting increase in income from job/enterprise/self employment
	Percentage of HH reporting income above median from livestock
Education	Percentage of respondents reporting increased access to functional school physical infrastructure (drinking water posts, separate washrooms, furniture etc.)
	Percentage of respondents reporting increased access to functional learning infrastructure (library, science labs, smart class, etc.)

Based on our study, the HRDI for the three districts have been calculated.

Table 8: HRDI for P0284

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
	0.06	**0.09**	**0.10**	**0.20**	**0.10**	**0.21**	**0.02**	**0.12**	**0.29**	**0.62**
%Change	**50%**		**100%**		**110%**		**500%**		**114%**	

A remarkable positive change can be seen. The theme-wise indicators were assigned varied weights to arrive at the composite HRDI score of 0.62 indicating a notable positive change toward the desired impact from the baseline score of 0.29. There is a 50 percent positive change in NRM but ST&LE and H&S has doubled over the baseline. PoE have shown an extremely remarkable improvement due to newer types of interventions in these schools although scale of the interventions could have been improved.

5 Analysis of Assessment Criteria

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

- Relevance and Convergence
- Impact and Effectiveness[1]
- Sustainability

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

5.1 Relevance and Convergence

The Hyderabad Karnataka region in Karnataka state, which includes districts like Bidar, Gulbarga, and Raichur, has long been recognized as a backward area with poor socio-economic indicators. These districts face various challenges, including being dryland and drought-prone regions, migration, illiteracy, inadequate infrastructure, lack of industrial development, and low human development index scores.

In addition to these challenges, water scarcity is a significant issue in North Karnataka, particularly in the Hyderabad Karnataka region. Over half of the districts in Karnataka are facing a water crisis, according to a report[2]. This region, including Gulbarga and Raichur districts, is grappling with a critical situation of water scarcity[3]. Irregular monsoons and poor market linkages pose challenges to agriculture in Raichur district, while Gulbarga district suffers from low literacy rates, especially among rural females.[4]

The project initiated by HDFC Bank and MYRADA aims to address these issues through a holistic and integrated approach. The project focuses on empowering communities in various sectors, including livelihoods, agriculture and natural resource management, health and sanitation, and education. The selected panchayats in backward taluks of Gulbarga, Raichur, and Bidar were strategically chosen based on their socio-economic criteria and proximity to operations. The goal of this integrated development approach is to uplift the communities, bridge the basic development gap in the region, and achieve sustainable growth and improvement in human development indicators.

5.2 Sustainability

Positive outcomes in terms of increased output and income have come from the agricultural interventions. The majority of the project's beneficiary farmers are currently using the practices and services for farm management. The project's inputs are still being used by the beneficiaries. The farmers are actively using the tools and equipment that have been given to the farmer groups. The majority of farmers still employ vermicomposting practices as a result of the training's general success.

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

2 https://www.deccanherald.com/india/karnataka/over-half-of-karnataka-districts-stare-at-water-crisis-says-report-1200846.html

3 https://thelogicalindian.com/story-feed/awareness/karnataka-water-crisis

4 https://thelogicalindian.com/story-feed/awareness/karnataka-water-crisis

The construction of farm ponds and treatment of the nala has been one of the successful interventions, considering the dry region. The farm pond ensures the elevation of ground water while acting as a reserve. The nala helps in irrigation during the drier seasons.

Farmers believe that continued adoption of sustainable farming solutions will result in notable improvements in productivity, especially when it comes to organic farming. Very few farmers have taken up horticulture, which could be due to the long duration that is required for them to begin producing. But adequate support has been provided by the implementing partner, however, more handholding was requested by the farmers. While few solar streetlights have been set up, there have been no mention of training community members to repair it if it comes down to it. The solar lamps provided to children have been in good working condition, even after years.

The skill development for self-employment has benefitted women in terms of undertaking joint and individual enterprises. Some of the active enterprises were tailoring and chilli powder machines. One of the most pioneer ventures that was introduced by MYRADA was the Goat Bank system in SHGs. Each SHG selects three members (based on discussion among the members) to get their first goats each, whose kids are then given to the next three members, and so on, until at least each member has one goat. This is one of the most successful models that was created by MYRADA and even after the closing of the project, the cycle has continued. The heavy involvement of each member ensures the sustainability of the activity in the long run.

Skill training for youths was well received. The main skill training done for them was driving and tailoring. Mr. Ismail, one of the main driver trainers in Gulbarga, fondly remembers how all the young ones that he had trained are now driving a variety of vehicles in different parts of the country. Many have moved to the cities, but he informed that many had also moved out of the state to cities like Hyderabad and Mumbai in search of a living. This has seen a sustained impact.

Health clinics and camps could have been conducted more frequently. Kitchen gardens have been proven useful, although respondents within the sample were few.

There are very few schools within the project villages, and some of these schools were in good condition. MYRADA and HDFC Bank supported some schools in wall painting, providing them with books, sports materials, support in smart class, which was enthusiastically received by the students and the staff.

6 Conclusion

6.1 Summary of Findings

The report highlights the findings of a project focused on natural resource management (NRM), skill training and livelihood enhancement, health and sanitation, and the promotion of education in Gulbarga, Bidar, and Raichur.

The project has had a significant positive impact on Natural Resource Management. On average, the **net income has risen from Rs. 40,000 to Rs. 55,000. Average productivity of major crops like toor dal, soyabean, and cotton have also increased by 17%.** Farmers have embraced **organic farming with nearly 50 percent them using organic fertiliser** like Azolla and vermi-composting, resulting in better-quality yields. Moreover, the project has encouraged crop diversification, leading to changes in the proportion of farmers growing various crops. The implementation of clean energy interventions, including solar lights, has been well-received by the community, benefiting school-going children and providing better lighting options during electricity shortages. More **than 85% of the respondents have benefitted from the implementation of solar street lights.**

In health and sanitation, **health camps achieved a 92% participation rate**, and 37% of the community actively participated in hygiene-related awareness sessions. Sanitation services have had a positive impact, **with 76% of households gaining access to sanitation units**. The kitchen garden project has empowered the community by providing seeds (88%) and training (67%), contributing to food security and self-sufficiency, **with 29.2% of produce being used for self-consumption and 29.2% sold for income generation**.

In skill training and livelihood enhancement, the adoption of organic farming practices, such as organic manure, vermi pits, and Azolla units, alongside timely use of fertiliser and insecticides, has resulted in **a remarkable 78% increase in productivity** and a **28% rise in income** for respondents. Support provided to Self-Help Groups (SHGs) has resulted in notable economic empowerment and improved livelihoods, **with 56% of SHG members reporting increased income generation and 97% actively saving**. Livestock services have also been successful, with improvements in household income and production attributed to the adoption of livestock management practices, resulting in better livestock health (45%) and increased household savings (18%). The training in driving and enterprise development has particularly benefited youths and women, enabling them to provide financial support to their families.

The implementation of smart classes and provision of learning materials in schools have shown positive outcomes for students in the project villages. **Smart classes have been well-received, with 91% of students finding lessons more engaging and 89% reporting better understanding.** Additionally, 36% of students noted faster syllabus coverage, and 43% found it easier to recall lessons. The library support has been beneficial, with 67% finding essential reference materials for exams, 53% using the library for assignments, and 55% appreciating access to reading materials beyond the syllabus, contributing to a broader knowledge base. **The library has also played a crucial role in improving reading habits for 71 percent of users.**

The HRDI score of 0.62 indicating a notable positive change of 114 percent toward the desired impact from the baseline score of 0.29.

6.2 Recommendations

MYRADA 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

- As a drought-prone area, more interventions in drinking water, such as setting up of water filters, provision of water tankers, etc. would have been more beneficial for the community.
- To make sure farmers are using the techniques taught and to help them with their issues, agriculture experts should conduct follow-up visits.
- Creation of farmer groups specific to floriculture so that costs of transportation could be reduced, thus enhancing their profits.
- Supporting floriculturists in developing market relationships could also be advantageous to them because the highly volatile and dynamic flower market makes it difficult for them to earn a living.

Skill Development and Livelihood Enhancement

- It is crucial to provide enterprises with hands-on support so they can establish market-linkages, business plans, connections to government projects, etc.
- More chances for women and young people to earn money as well as business-related training, as these initiatives were well received by them.
- More advanced training on production practices and the use of machines/tools for farmers to keep pace with the demands of the market.

Health and Sanitation

- Frequent health camps would be beneficial for the community as many of the villages need to travel far for their medical needs.

Annexures

A Sampling Methodology

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

A.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 400.

A.2 Quantitative Sampling Methodology

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 beneficiaries:

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 – MYRADA. Simple random sampling was done to select the required number of households from within the list. Since beneficiary selection was undertaken independently for each project, the selection of more than one beneficiary from a single household was probable.

Stage 2- Sampling for villages:

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 9 villages to be covered under the survey.

Stage 3- Sampling for activities:

The total sample of 400 was then distributed amongst various themes depending on the significance of activities done.

A.3 Qualitative Sample Size Calculation

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

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

HRDI Methodology

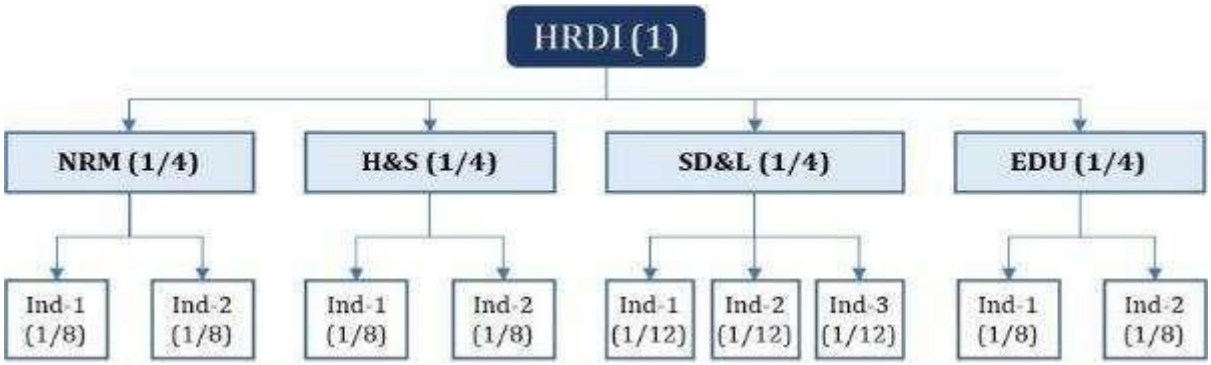
The outcome indicators included in the HRDI were obtained from different domains and are consequently measured on different scales. Therefore, to ensure the comparability of these indicators, all the indicators were converted into discrete variables such that the indicators could be measured between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

A.4 Indicator Weights

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

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

Figure 44: Domain and Indicator Weights



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 9: Example of HRDI Calculation

Thematic Area	Indicators	Formula
NRM	Proportion of farmers with net income above median	(1/4) x (1/3) = 0.083
	Proportion of farmers reporting increased productivity of three main crops above median (before and after)	(1/4) x (1/3) = 0.083
	Percentage of farmers reporting access to irrigation	(1/4) x (1/3) = 0.083
ST&LE	Percentage of households who are getting skill training & reporting increase in income from job/enterprise/self-employment	(1/4) x (1/2) = 0.125
	Percentage of HH reporting income above median from livestock	(1/4) x (1/2) = 0.125
H&S	Percentage of households reporting increase availability of drinking water facility	(1/4) x (1/2) = 0.125
	Percentage of households with access to improved toilet facility	(1/4) x (1/2) = 0.125
PoE	Percentage of respondents reporting increased access to functional school physical infrastructure (drinking water posts, separate washrooms, furniture etc.)	(1/4) x (1/2) = 0.125

	Percentage of respondents reporting increased access to functional learning infrastructure (library, science labs, smart class, etc.)	(1/4) x (1/2) = 0.125

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

A.5 Analysis Plan

HRDI for each district was calculated at two points in time i.e., before and after HRDP and can be compared cross-sectionally to understand which indicators contributed to an increase or decrease in HRDI value. Since the value attribution of the indicators is in proportion, the HRDI value numerically ranges between 0 and 1. Once all the indicators are standardized and weighted, a sum of these weighted indicators are utilized to calculate the value of HRDI.

A.6 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. It was considered at baseline, then all the farmers were sorted across the seven blocks/villages 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 endline 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: Summed up all the indicators (i.e., weighted sum) to calculate the HRDI value at baseline and endline.

Step 7: Calculated the relative change in the HRDI value from baseline to endline.

The calculation for three districts of Karnataka has been detailed below (see Table 10).

Table 10: HRDI Calculation for Karnataka

Domain	Indicators	Baseline score	Baseline HRDI	End line score	Baseline HRDI	% Change
NRM	Proportion of farmers with net income above median	0.15	0.06	0.23	0.09	50
	Proportion of farmers reporting increased productivity of three main crops above median (before and after)	0.04		0.10		
	Percentage of farmers reporting access to irrigation	0.05		0.05		
ST&LE	Percentage of households who are getting skill training	0.11	0.10	0.23	0.20	100

Domain	Indicators	Baseline score	Baseline HRDI	End line score	Baseline HRDI	% Change
	& reporting increase in income from job/enterprise/self-employment					
	Percentage of SHG members reporting income above median from rural enterprises	0.11		0.33		
	Percentage of HH reporting income above median from livestock	0.14		0.26		
H&S	Percentage of households reporting increase availability of drinking water facility	0.12	0.10	0.28	0.20	110
	Percentage of households with access to improved toilet facility	0.20		0.32		
	Percentage of households reporting increase in use of fruits/vegetables from the nutrition garden	0.10		0.23		
PoE	Percentage of respondents reporting increased access to functional school physical infrastructure (drinking water posts, separate washrooms, furniture etc.)	0.02	0.02	0.19	0.12	500
	Percentage of respondents reporting increased access to functional learning infrastructure (library, science labs, smart class, etc.)	0.06		0.27		
Total			**0.29**		**0.62**	**114**

B Overview of Impact Calculation

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

Table 11: Impact calculation

Outputs	Output Indicators		Output Avg.	Impact Level
NA. Increased income from agriculture				
N. A1Land/ crop productivity	NA1. (a) Proportion of farmers reporting an increase in production of crops that were supported under HRDP	79%	43%	Medium
	NA1. (b) Proportion of farmers reporting increased input efficiency after the intervention	59%		
	NA1. (c) Proportion of farmers reporting increased income from crops that were supported under HRDP.	61%		
	N.A1.i(d) Average increase in income from crops that were supported under HRDP (% change)	21%		
	N.A1.I (e) Average increase in productivity from crops that were supported under HRDP (% change)	17%		
	N.A1.i(f) Average decrease in input cost (% change)	20%		
N.A2. Access to the farm management infrastructure	N.A2(a) Proportion of beneficiaries satisfied with the quality of available services (in farm management)	45%	64%	Medium
	NA2. (b) Proportion of farmers reporting project interventions in seeds, tools, and irrigation leading to an increase in production	63%		
	NA2. (c) Proportion of farmers reporting project interventions leading to increase in income (average of top 4-5 crops)	57%		
	NA2. (e) Proportion of farmers currently practicing organic farming/conservation agriculture/other sustainable practices	79%		
	N.A2.(f) The proportion of farmers reporting an increase in the use of natural fertiliser?	58%		
NA.3 Increased adoption of crop diversification	NA3. (a) Proportion of farmers diversifying their crops with project support.	8.50%	30%	Low
	NA3. (b) Proportion of farmers who report income increase due to crop diversification (base = farmers who adopted crop diversification)	52%		
NA.5 Land under irrigation	NA (4). (b). The proportion of farmers who received support for irrigation	52%	52%	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)	46%		
	NC1. (b)Proportion of households reporting benefits from using clean energy infrastructure (Base=clean energy beneficiaries)	28%	37%	Low
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	82%		
	SA.i(b) Proportion of farmers who demonstrate awareness regarding sustainable farming practices	81%	82%	Medium
S.A.2.Adoption of improved farming practices	SA.ii(a) Proportion of farmers who adopt scientific agricultural practices	37%		
	SA.ii(b) Proportion of beneficiaries reporting an increase in productivity due to better farm management	78%		
	SA.iii(c) Proportion of farmers reporting increased income	27%	47%	Medium
SB. Economic empowerment through collectivization (Only for SHG members)				
SB.1 Formation/ revival of SHG-based Enterprises	SB.i(a) Proportion of members who received support with establishing/reviving SHGs	92%		
	SB.i(b) Proportion of members who received support with establishing/reviving SHG enterprises	19%		
	SB.i(b) Proportion of members whose SHGs are currently functioning	95%	69%	Medium
SB.2 Development of entrepreneurship	SB.ii(a) Proportion of SHG members who received training	70%		Medium
	SB.ii(b) Proportion of SHG members undertaking entrepreneurial activities	19%		
	SB.ii(d)Proportion of SHGs with increased savings	90%		
	SB.ii(e) Proportion of SHG members reporting improved income	100%	70%	
SC. Enhanced capacity for regular income generation				
SC.1 Enhanced employable skill development	SC.1(a) Percentage of youth who accessed skill development training	22%		
	SC.1(b) Percentage of youth who report improved income through skill development	92%	57%	Medium
SC.2 Access to self-employment and entrepreneurial opportunities	SC.2(a) Proportion of beneficiaries who established/ expanded entrepreneurial activities	16%	44%	Medium

	SC.2(b) Proportion of beneficiaries reporting improved capacity to undertake entrepreneurial activities	23%		
	SC.2(c) Proportion of beneficiary HHs reporting an increase in income	92%		
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	15%		
	SD.i(b) Proportion of beneficiaries reporting an increase in income from livestock management	62%		
	SD.i(c)Proportion of beneficiaries reporting improved livestock health	56%		
	SD.i(d) Proportionate increase in average income from livestock	50%	46%	Medium
HA. Improved health infrastructure and services				
HA.1 Establishment/ enhancement of health infrastructure and services	HA.i(a) Proportion of beneficiaries who gained access to health services	97%		
	HA. i(b) Proportion of beneficiaries reporting lifestyle changes due to improved access	100%		
	HA.i(c) Proportion of beneficiaries who consulted medical references from camps	18%	72%	High
H.B. Improved sanitation infrastructure and services				
HB.1 Establishment/ enhancement of sanitation infrastructure.	HB.i(b) Increase in no of HHs with access to sanitation infrastructure/ facilities	70%		
	HB.i(c) Proportion of beneficiaries reporting benefits due to improved access	100%	85%	High
H.C. Development of Kitchen gardens				
HC.1 Increased adoption of kitchen gardens	HC.i(a) Proportion of HHs reporting income gains from kitchen gardens	71%		
	HC. i (b) No of HHs received seeds/training in the kitchen garden	77%		
	HC.i(c) No of HHs with improved vegetable/fruit consumption due to kitchen gardens	53%	67%	Medium
HD Improved awareness and health-seeking behaviour				
HD.1 Awareness regarding health and sanitation practices	HD.i (a) Improved dietary practices/ reduced tobacco consumption/ improved physical exercise	95%	95	High
HD.2 Adoption of positive health and sanitation practices	HD.ii(b) Increase in no. of HHs adopting proper solid waste management practices	21%		
	HD.ii(c) Increase in no of HHs adopting proper liquid waste management practices	62%	42%	Medium
HE. Improved availability and management of water				
HE.1. Access to drinking water at household and community levels improved	HE.1. (b)The proportion of households reporting improved well-being due to the availability of clean drinking water.	75%	75%	High
Outcome EA. 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	80%		
EA.2 Improvements in quality of teaching	EA.ii(a) Proportion of teachers regularly utilizing smart classrooms/libraries/smart class	84%	80%	High
Outcome EB. Improved learning outcomes				
EB.1 Improved exam performance and subject confidence among students	EB.i(a) Proportion of students who gained access to coaching classes	NA	NA	
	EB.i(b) Proportion of students who report improvements in access to reference material	NA		
	EB.i(c) Proportion of students reporting an increase in confidence in various subjects (lessons are easy to understand, more interesting, etc.)	NA		
	EB.i(d) Proportion of students who received scholarships	NA		
	EB.i(e) Proportion of teachers reporting improvements in learning outcomes due to infrastructural facilities at institutions (concept retention, attention span, and exam performance)	NA		

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

C Two Sample Proportions Z Test

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

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

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

where:

p1 is the proportion in the first sample

p2 is the proportion in the second sample

p is the pooled proportion, calculated as (p1n1 + p2n2)/(n1 + n2)

n1 is the sample size of the first sample

n2 is the sample size of the second sample

The z-statistic is then compared to the standard normal distribution to determine the p-value of the test. A p-value less than alpha (typically 0.05) indicates that the null hypothesis can be rejected, and there is evidence to suggest that the two proportions are different.

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

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

The two samples are independent.

The two populations are normally distributed.

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

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

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

Assumptions:

Independence: The two samples must be independent of each other.

Normality: The two populations must be normally distributed, or the sample sizes must be large enough (n1p1n2*p2 > 10).

Binomial distribution: The population does not need to follow a binomial distribution, but the test is more powerful if it does.

The z-test conducted for two indicators- **Proportion of farmers with income from agriculture above baseline median and percentage of households who are getting skill training & reporting increase in income from job/enterprise/self-employment.**

Table 12: Z-test Conducted for P0284

Indicator	Proportion of farmers with income from agriculture above baseline median	Percentage of households getting skill training & reporting increase in income from job/enterprise/self-employment
p1 (proportion of first sample-endline)	69	69
n1 (sample size of p1)	84	91
p2 (proportion of second sample-baseline)	46	46
n2 (sample size of p2)	84	91
p	0.68452381	1
Calculation	0.071705576	0.071500526
z statistic	3.207560879	3.216759564
	Statistically significant at 95% confidence level (or p<0.05)	Statistically significant at 95% confidence level (or p<0.05)
P-value for the z statistic (calculate here: https://www.socscistatistics.com/pvalues/normaldistribution.aspx)	0.0133	0.0128

D Sustainability Theme-wise Matrix

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

Support provided	Structures established	Technical Know-how	Usage	Maintenance
NRM				
Water Management- Irrigation	✓		✓	✓
Farm Management	✓	✓	✓	✓
Clean Energy	✓	X	✓	✓
Skill Training and Livelihood Enhancement				
Agriculture Training and Support	✓	✓	✓	✓
Livestock Management		✓	✓	✓
SHG Development	✓	✓	✓	✓
Skill Development		✓	✓	
Health and Sanitation				
Health Camps/clinics			✓	
Kitchen Garden	✓	✓	✓	X
Promotion of Education				
Educational Institution Development		✓	✓	✓