

Impact Assessment Study Of Holistic Rural Development Programme (HRDP) Jharkhand



Prepared For:



HDFC Bank CSR

Prepared By:



NR Management Consultants India Pvt Ltd.

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Executive Summary

The study centers on measuring the impact of the Holistic Rural Development Programme (HRDP) of HDFC Bank that was **implemented by NEEDS in the Jhinkpani block of West Singhbhum district in Jharkhand**. This study largely focused on understanding the overall process that the HDFC Bank and the implementing organization undertook in carrying out the programme activities, key milestones achieved, the impact created by these activities, and the challenges faced. The **key focus areas of the intervention were Education, Health and Sanitation, Natural Resource Management, and Skill building and Livelihood enhancement**. The framework used was an adaptive version of the DAC criterion- Relevance, Effectiveness, and Sustainability. **A comprehensive methodology, comprising both primary and secondary data collection was used** for the assessment and the assessment was carried out in a participatory manner involving all the key stakeholders of the programme. The study had a **sample size of 410** interviewees as against the planned sample of 400.

NRM: NRM was one of the key components of the programme as irrigation coverage in the programme area was almost negligible and agriculture remains one of the primary occupation of the community. Findings suggest an **80% increase in the net income from farming** since the inception of the project due to reasons like intervention in irrigation, organic farming and favourable weather conditions. While **64% of the beneficiaries have stated that they have increased the usage of natural fertilizers, 58% of the beneficiaries have also adopted crop diversification**, which was promoted under the HRDP to do away with the practice of monocropping. However, the use of chemical fertilizers hasn't come down as it is difficult to bring a change in a short time and the seeds distributed under the project didn't seem compatible with organic fertilizers. **Crop productivity also went up by 44% as area under irrigation increased and there has been a 21% increase in number of farmers having irrigated land**. The intervention has been quite effective in increasing the production of vegetables and simultaneously increasing farmers' income. The support for vegetable seeds and irrigation facilities has caused increase in **production of vegetables from 11% before the project to 47%. Moreover, this has even helped farmers in saving on the input cost during the project**. The solar street lights installed in the programme villages have benefited the community, however, some of the lights installed are not operational anymore and haven't been repaired (35%).

Health and Sanitation: Poor hygiene habits, malnutrition and high incidence of diseases like malaria and diarrhea in the programme villages made it imperative to promote good health and sanitation amongst the community. About **68% of the respondents who benefitted from health services had availed health camps and hygiene-related health sessions which has helped in bringing lifestyle changes like better dietary habits (94%) in the community**. However, measures to promote family planning need to be taken to further tackle the problem of malnutrition in children. The **usage of individual household toilets went up from 18% before the programme to 98% after the programme** which has led to improvement in the overall health of household members (63%), and safety for women members (76%). **However, the practice of open defecation is still prevalent in the community. 32% of the respondents were also provided with soak pits/handpump platform construction** for waste water management and preventing the spread of

water-borne diseases. There has been a gradual positive change in the community in terms of health and hygiene practices due to the sessions with the community. Further, the **kitchen gardens** made available to ultra-poor households helped in **reducing expenditure on vegetables (69%) and increasing vegetable consumption (72%)**.

Skill Training and Livelihood Enhancement: The **reach of the intervention was less** as only 22% of the total sampled beneficiaries received benefits under agriculture training and support. **Backward agricultural practices and low crop productivity** made the programme work on agricultural skills of the farmers. The **training have been useful in improving their capacity to increase productivity (69%), awareness of sustainable farming practices (39%), and reduce crop loss (24%)**. However, there is no significant change between agricultural practices done before vis a vis after the project. Nevertheless, qualitative data suggests that **farmers shifting to organic fertilizers and pesticides saw an improvement in the soil quality**. However, the **adoption of SRI and construction of vermi pits by the farmers has been very low** as they find it difficult to manage it along with other things. The farmer groups formed under the programme reported benefitting in the form of reduced risk in farming (49%). Further, **the intervention on the involvement of SHG members in enterprise development and promoting women empowerment wasn't effective** and saw a decrease in income by 12.5% as none of the enterprises supported are functional anymore due to product prices and logistical reasons. Moreover, the programme supported the community members, especially the malnourished households with livestock birds to help them with an additional source of nutrition and income. **These households reported an increase in the monthly income from livestock rearing by 34%, however, this intervention wasn't sustainable as only 20 birds were provided out of which many died.**

Promotion of Education: Although the infrastructural developments taken place in school to promote good education have been useful, they haven't caused a direct impact on the attendance of the children as attendance drops during the farming season since children are expected to assist their parents on the field. The **intervention on smart classes has also not proven to be effective** as most teachers have not made use of the same (85%) due to lack of interest and training. However, **toilets renovated and constructed in schools have had an impact in making students attend school regularly (93%)**. Furthermore, the sports training for adolescent girls helped in boosting girls' confidence and interest in sports while the training was free of cost. However, there is very less participation of girls in archery now as the training is no longer free. Nevertheless, the remedial coaching classes under the project have helped school dropout girls pass high school and caused a decline in the cases of child marriage.

HRDI Indicators: For assessing the effectiveness of the interventions, the study has used the existing Holistic Rural Development Index (HRDI) created by the programme. The HRDI is arrived at by defining key outcome indicators for each of the domains and developing a composite index. The composite HRDI score indicated a positive impact at **0.62** for West Singhbhum.

Table 1: Summary of HRDI scores for West Singhbhum¹

HRDI Score	Baseline	Endline	% Change
	0.39	0.62	59%

Table 2: Summary of key income indicators

Income Indicators (based on median)	Before	After	% Change
Median Monthly Net Income from Agriculture (INR)	10000	18000	80%
Median Monthly Income from Livestock (INR)	372	498	34%
Median Monthly Income from SHG (INR)	2000	1750	-12.5%
Average Productivity of 3 major crops (kg /Acre)	1167	1675	44%

Recommendations: A combination of training and physical infrastructure support would lead to better maintenance and sustained **effectiveness of interventions, especially in natural resource management, skill training, and livelihood enhancement and education.** Follow-up services would ensure that the irrigation facilities are functioning and catering to farmers’ needs. In case of livelihood enhancement, proper training on production processes for year-round business and market linkages can ensure a sustained source of income. In the case of health and sanitation, it’s imperative to address the socio-cultural causes preventing the usage of toilets at home. With regard to education interventions, capacity building of teachers for operation of smart class and follow-up service is needed to ensure usage for the intervention to be successful. Moreover, convergence with government for sports promotion is needed given the interest of the students in sports.

¹ Overall HRDI scores will range from 0 to 1, with

- 0 being Low/Poor and 1 being High/Best

- For instance: 0 to 0.33: Poor/Low; 0.34 to 0.66: Moderate/Medium; 0.67 to 1: High/Best (Good)

Figure 1: Overview of project impact

	Health and Sanitation	Skill Training and Livelihood Enhancement	Natural Resource Management	Promotion of Education
Overview of Activities	Health camps, MHM training, household toilet construction, soak pits, kitchen garden, nutrition management training	Farmer field school as a demonstration site, backyard poultry, SHG empowerment and enterprise development	Lift irrigation, drip irrigation, construction of ponds, solar street lights	Mini-libraries, TLM support,, smart class, renovation of AWC and schools, sports training in archery and football, Anandshala
Areas of Improvement	Awareness regarding importance of using toilets	Further training on SRI, enterprise development	Operation of water user groups for the management of irrigation facilities, follow up services	Training of teachers to operate digital infrastructure
Challenges	Problem of malnutrition in children, poor community	Seasonal enterprises not appropriate for sustainable income	Slow adoption of new and improved practices of production, indifference among community members	Drop in attendance during farming season
Recommendations	Address socio-cultural factors constraining toilet usage, More initiatives to improve nutrition	Promoting enterprises that provide year round employment and income , especially for SHGs, handholding support for FPO	Post installation repair services for solar lights. Convergence with government schemes to promote good agricultural practices	Making SMCs more active, continuation of remedial coaching classes to assist school dropouts, convergence with government to promote sports

1. Introduction

1.1. Background of the Study

The rate of poverty in India continues to remain high with a large proportion of the rural population being engaged in agriculture and dependent on rain-fed irrigation. Therefore, under its CSR initiative, the HDFC bank supports programs to deliver holistic rural development and aid the growth and prosperity of the rural population. Within Parivartan, the CSR initiative, the “Holistic Rural Development Programme” (HRDP) is the flagship CSR program under which non-governmental organizations (NGOs) across the country are supported to bring development interventions. The idea of these programs is to ensure the creation of prosperous and content communities by initiating sustainable socio-economic and ecological development. With its holistic approach, the programme caters to the needs of the communities by providing necessary inputs on areas like promoting economic independence through skilling and livelihood opportunities, providing basic infrastructural development, and establishing a better ecosystem that promotes better living conditions. By focusing on developing human capital, management of natural resources, and infrastructure in poor and backward villages, it plans to bring about a socio-economic transformation in the lives of the rural community. In the assessed HRD programme, Network for Enterprise Enhancement and Development Support (NEEDS) was the implementing partner in the Jhinkpani block of West Singhbhum district, Jharkhand. The programme covered a total of 15 villages in the block. The major focus areas for the intervention were Natural Resource Management (NRM), Skill Development & Livelihood Enhancement, Promotion of Education, and Healthcare & Hygiene. However, the extent of the work in each village was undertaken based on the need and varied from village to village.

1.2. Partner Organization-NEEDS

NEEDS (Network for Enterprise Enhancement and Development Support) was established in late 1998 as a trust. Its interventions lie in the selected poverty-stricken pockets of Bihar and Jharkhand. It pioneers the promotion of climate resilient agriculture and climate adoption initiatives while promoting and securing the sustainable livelihood of small and marginal farm households. From their trust, NEEDS has brought about a significant change in the lives of women and children in terms of food security, livelihood, reproductive health, hygiene, and child development and protection outcome besides the constitution and strengthening various institutional arrangements for sustainability.

The Holistic Rural Development Project (HRDP) was initiated in 2017 in 15 villages of the Jhinkpani block of West Singhbhum district in Jharkhand with the support of HDFC Bank Ltd.

NEEDS reached over 3000 small and marginal farm households over 4 years (2017-2021). It aimed to generate significant improvement in the quality of life of the tribal community by providing various tools and means through activities for skill development and income generation, infrastructure development, and health and educational advancement.

NEEDS’ interventions in Jhinkpani, Jharkhand covered the thematic areas of NRM, skill development and livelihood enhancement, healthcare and hygiene, and promotion of education. In agriculture, it

worked on improving productivity, crop diversification and access to irrigation facilities, and increasing the irrigation command area. Farmer field schools were established and technological demonstrations were done for the farmers to extend new knowledge and practices in farm-based livelihoods. Lift irrigation systems have been established and portable lifting devices were provided to farmers' groups. Improved seeds were provided to ensure an improvement in income from vegetable cultivation. Farmers were supported to set up low-cost poly nurseries for soilless nurseries. Moreover, farmers were given materials to set up kitchen gardens to improve the nutritional security of their households.

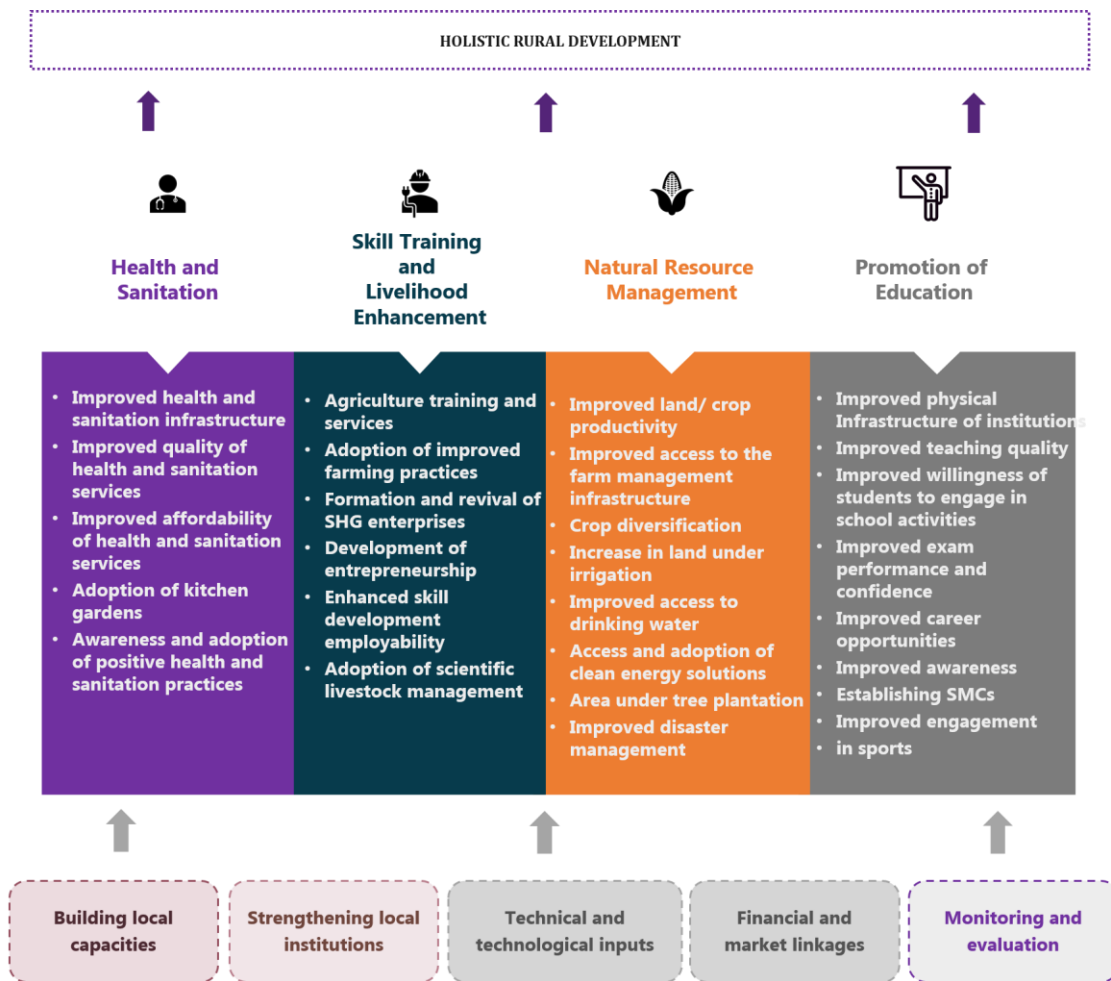
Some other interventions included ensuring access to basic sanitation, hygiene, educational institutions development, promotion of sports, electrification facilities through infrastructure support, livelihood enhancement, empowerment of women, and mobilization of household savings for productive use. Further, NEEDS created village-level institutions (Village Development Committees) and water user groups to manage the resources and monitor the activities, thus ensuring sustainability and ownership by the community.

1.3. Purpose and objectives of the study

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

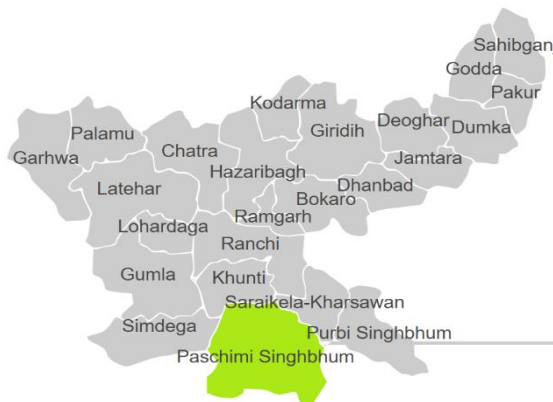
Since most of the population residing in the intervention villages is from the Scheduled Tribe and Scheduled Caste community, the programme targeted women, children, and farmers from the same communities. Considering the challenges that people of these villages face in the form of poor hygiene and sanitation, poor quality of education, and lack of basic infrastructure, the HRDP focused on promoting water management in agriculture, general water management, farm management, clean energy, and plantation. Apart from **NRM**, the programme also focused on agriculture training and support, SHG/Women development, skill training, livestock management, entrepreneurship development under **Skill training and Livelihood Enhancement**; educational institutions development and education support under **Promotion of Education**; health and sanitation, and kitchen garden under **Healthcare and Hygiene**.

Figure 2: Conceptual framework of the implementation



The study was conducted in Jharkhand, particularly in the West Singhbhum district. In the district, 15 villages were covered in the Jhinkpani block.

Figure 3: Areas covered under the study



2. Research Methodology

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

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

To assess the impact and effectiveness² of the program, the findings seek to establish the values of outcome indicators of all the thematic interventions. These findings are assessed against the outcome indicators finalized during the outcome harvesting stage. Further, through qualitative evidence, the evaluation tries to understand whether and how the program impacted the lives of the community members in the program areas. This was done through an analysis of program outcomes in light of certain variables identified in consultation with HDFC Bank. The findings from primary quantitative data have been substantiated by the information gathered from discussing with the communities/beneficiaries, teachers, students, entrepreneurs, and local institutions at the village level. Through primary data, the study has tried to understand if the programme has worked on strengthening the community's capacity to ensure sustainability, and whether any of the activities or strategies adopted have been/could be replicated.

2.1. Design and Methodology

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

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

² While from an evaluation perspective impact and effectiveness are two different aspects, in the report, these are used interchangeably

2.2. Sample Size and Distribution

The sample size covered during the field is as follows:

Table 3: Quantitative Sample Covered

District	Health and Sanitation	Skill Training and Livelihood Enhancement	NRM	Promotion of Education	Total HHs
West Singhbhum	90	359	219	120	410
Planned	83	84	150	83	400

The total sample calculated for the study was 410. This sample was divided into various thematic areas covered under the programme in the state based on the relevance of the activities conducted and the beneficiaries covered. For the selection of the sample, beneficiaries were selected from the list obtained from NEEDS using random sampling. For the next step, the village level sampling was done following the Probability Proportionate to Size (PPS) method. For the qualitative analysis, a total of 17 IDIs and FGDs were conducted out of 20 to assess the change that has happened over time.

Table 4: Qualitative sample size covered

Jhinkpani	FGDs				IDIs		
	<i>Business Enterprise</i>	<i>Students</i>	<i>Farmers</i>	<i>Teacher</i>	<i>Archer</i>	<i>AWW</i>	<i>Farmer</i>
Total	3	1	2	2	1	2	6
Planned	3	2	5	2	1	2	5

Image 1: Training of field team held at Chaibasa, West Singhbhum

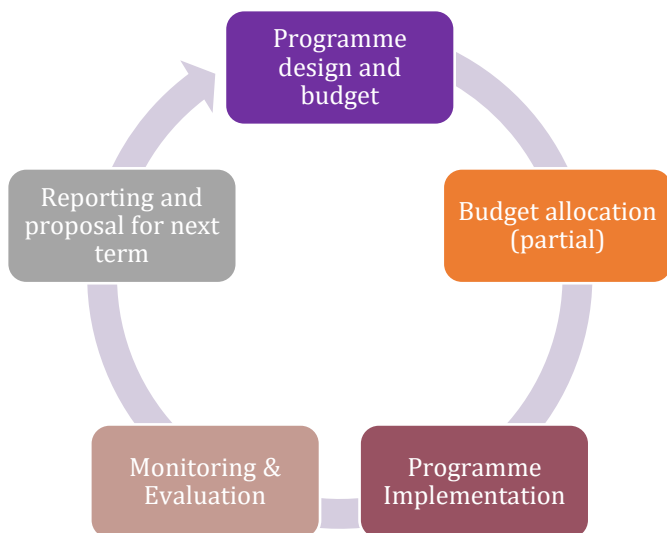


Since there was no baseline available for this evaluation, the recall method was used in the household survey to assess the change that has happened over time. For this purpose, the respondents were asked to recall the value of critical indicators at the start of the program. Teams of local enumerators, with requisite education and experience, were hired for data collection. Two days of training in Chaibasa were provided to enumerators and supervisors by the NRM team.

3. Program Review

3.1. Program Design and Implementation

The programme's interventions are decided on an annual basis, with an annual budget allocation based on the proposal by NEEDS to HDFC Bank. Based on our discussions with the partner team, a preliminary rapid rural appraisal (RRA) for each programme village was conducted in West Singhbhum to explore the problems and constraints in the villages. The methodology used for the RRA was transect walk, social mapping, and FGDs. The partner organization prepared an annual work plan wherein activities were proposed on a need basis, which emanated from the preliminary assessments. While this approach has helped in providing support to the immediate need of the communities, a systematic approach to resolving issues around such needs and a long-term vision and outcomes towards the



thematic areas for HRDP remain desirable. Upon field observation, budget allocation was largely provided for infrastructure and material support, the establishment of irrigation facilities, and providing livestock. Painting and renovation work at schools and Anganwadi centres and the smart class initiative in schools were the areas where the budget was allocated. While the capacity building of farmers and provisioning of vegetable seeds were there, interventions in the area of enterprise development were not efficient. Monitoring of the intervention by HDFC Bank is quite frequent and resources from different levels are deployed to monitor the activities frequently. Such monitoring visits focus on the output aspects such as infrastructure and access, along with the usage and community-level challenges.

3.2. Program Relevance

NRM: Being predominantly rain-dependent, agriculture in Jharkhand is subjected to the vagaries of the monsoon rains when the normal patterns of rainfall are disturbed. There is a significant potential for the agricultural area that remains unused as out of the net sown area, irrigation facilities are confined to only 15% of the area and less than 6% of the farmers possess irrigation equipment³. This issue was also highlighted in the Rapid Rural Appraisal (RRA) conducted by the implementing agency. Irrigation coverage was found almost negligible with very few farmers having marginal access to irrigation facilities. Therefore, lift and drip irrigation methods were found relevant to

³ <https://india.mongabay.com/2021/10/jharkhands-solar-pump-scheme-aims-to-improve-lives-of-farmers-by-increasing-irrigation-potential/>

address the problem of inaccessible irrigation. Moreover, the programme felt it necessary to have sustainable water harvesting structures available to farmers to cope with the vicious cycle of low productivity and low income caused by periodic agricultural drought and poor access to resources. Thus, it worked on constructing small ponds (*dobhas*). Further, programme villages did not have streetlights or lighting near hand pumps or meeting places and therefore, a need was felt to support the community members, especially the women and the children with the installation of streetlights.

Image 2: Lift Irrigation Assistance under HRDP in Bingtopan, West Singhbhum



Image 3: Puffed Rice Processing Unit Established under HRDP in Kelende



Skill: One of the concerns highlighted during the RRA was backward agricultural practices and low crop productivity despite good soil health because of poor packages of practices. Mono cropping is practiced widely and very traditional agriculture practices are still used that give low productivity. HRDP recognized the potential the villages have to adopt good agricultural practices and organic farming for low input and high-value cropping. It, therefore, worked on promoting agricultural skill sets by establishing farmer field schools for training and technology demonstration. Farmers were also taken to Deoghar for training several times. Further, since livestock plays a vital role in the agrarian economy of Jharkhand by contributing to employment, income, and women empowerment, NEEDS identified certain challenges

concerning livestock in the intervention villages. It was found that the mortality and morbidity in the livestock were high. Access to animal husbandry services by the villagers was also an issue due to which proper checkups, vaccinations, etc. were not in practice. The programme provided support for duck rearing and backyard poultry. Para veterinary training and regular vaccination and medicines for the upkeep of livestock health and care were also organized.

A significant proportion of the people of rural Jharkhand are at a subsistence level of income and livelihood and one of the programme's key objectives was to strengthen and enable women's group-based institutions such as self-help groups (SHG) to build productive assets of their own. Therefore, SHG members were supported with microenterprises to promote entrepreneurship and livelihood diversification among them.

Health and Sanitation: The intervened villages had poor hygiene habits and women and girls were not aware of MHM practices. The incidence of malnutrition and diseases like filariasis, malaria, TB, and diarrhoea was also found high during the assessment done by NEEDS.

The programme, therefore, made efforts to improve the health and sanitation facilities and undertook multiple interventions to improve accessibility and availability of quality health and sanitation facilities like health camps, holding hygiene and behaviour change sessions, and home-based care training for Anganwadi workers and parents. Given that Jharkhand is one of the worst performing states when it comes to inaccessibility to a toilet and its usage, with 41% of households not having any access to a toilet⁴. HDFC Bank realized the importance of sensitizing the people regarding the need of having toilets and undertook toilet construction in collaboration with the Swachh Bharat Mission. It also constructed soak pits for wastewater management to keep the villages clean and reduce the incidence of water-borne diseases at the household level. Lastly, the kitchen garden initiative also seemed relevant given the situation of women’s and children’s nutrition in rural Jharkhand⁵.

Image 4: Sanitation infrastructure built under HRDP in Hatnabeda, Jharkhand



Educational Institutions Development: Jharkhand holds the fourth position amongst all states and union territories in the country for having the lowest literacy rate⁶ and the average literacy is much lower for the rural areas (61.1%) than the urban areas (82.26%)⁷. The analysis from RRA found a lack of proper school infrastructure, poor performance of few children in terms of their ability to read, write and solve math problems to the ability of their class, and no special training classes for children to enhance their quality of education. Therefore, the intervention around education was relevant at the time the programme started as only limited support was available to schools by the government.

Image 5: Anganwadi renovation under HRDP, Tutugutu

Under HRDP, efforts were made to increase the attendance and retention rate by providing school infrastructural support and promoting a joyful learning environment at schools. Further, special initiatives were taken for girls like classes for girls who dropped out of school and enrolling them with NIOS (National Institute of Open Schooling), and training girls in sports like archery and football to help build their self-esteem and confidence.



⁴ [Drinking Water, Sanitation, Hygiene and Housing Condition in India, NSO, 2018](#)

⁵ Rural under- five mortality, stunting, and underweight rate stood at 49.2 %, 42.3%, 41.4% respectively according to [National Family Health Survey-5, 2020-2021](#)

⁶ <https://timesofindia.indiatimes.com/city/ranchi/only-12-rise-in-literacy-rate-in-a-decade/articleshow/22427369.cms>

⁷ [Census 2011](#)

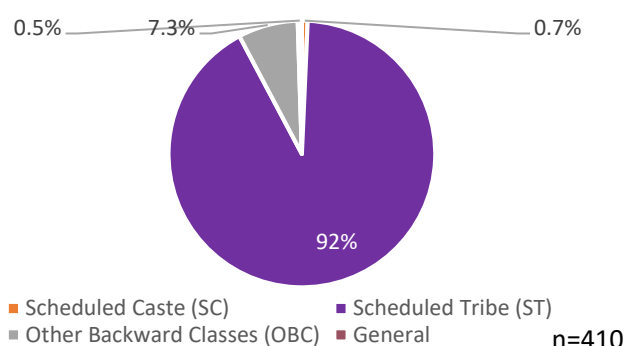
4. Study Findings

This section will highlight the key findings from the field survey conducted to assess the impact of the programme after its completion. The section also gives insights into the sustainability of the project interventions along with the measurable impact in terms of the change in the HRDI score.

4.1. Demographic profile

This section provides the demographic profile of the respondents⁸ covered in the sampled program villages under the assessment. In Jharkhand, the assessment was undertaken in the West Singhbhum district and focused on the Jhinkpani block within the district.

Figure 5: Social profile of the respondents



The sample was representative of both male (42%) and female (58%) and comprised of the marginalized sections of the society (Ref. fig. 5) living mainly in kutcha (55%) and semi-pucca houses (43%). Moreover, 76% of the respondents even fall in the below poverty line category.

The level of illiteracy was found low as about 32% of the sample size was illiterate and 21% of the sample had completed high school (ref. fig. 7). Moreover, cultivation (77%), livestock (53%), and wage labour (51%) were reported as the primary sources of livelihood (ref. fig. 6).

Figure 7: Literacy level of the respondents

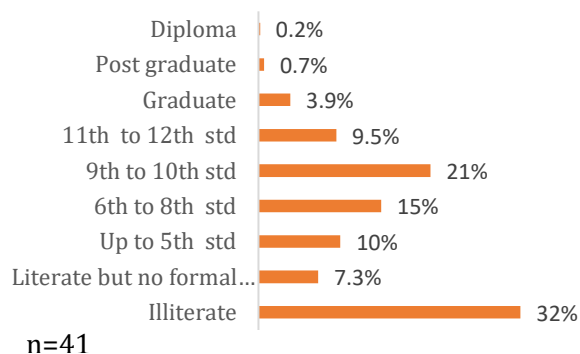
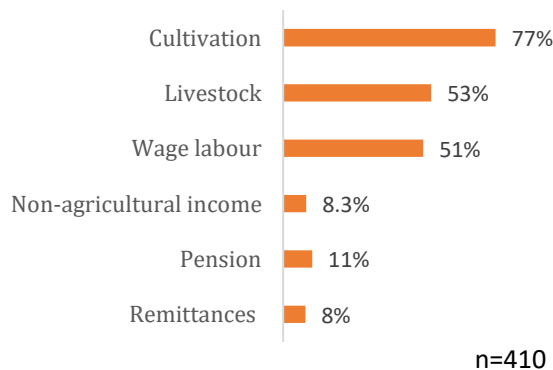


Figure 6: Sources of Income



Firewood remains the main source of cooking

(95%) and only 4.6% of the households also reported using LPG. Further, the main sources of drinking water for the community were- public tap/standpipe (68%) and tubewell/ borehole (24%).

⁸ The respondents are the beneficiaries of various activities under the interventions that were covered under the Household survey (sample size= 410)

4.2. Natural Resource Management

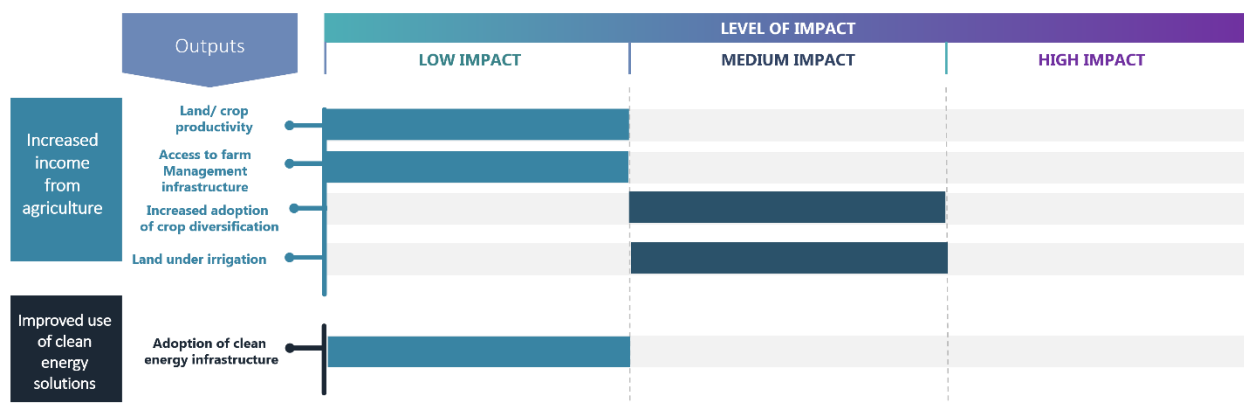
Table 5: Activities under NRM in Jharkhand

Activity Category	Activities
Irrigation Management	Construction of New Pond, Construction of Masonry Check dam, Setting up micro lift irrigation system with the excavation of seepage/intake wells, Setting up micro lift irrigation system in existing river/tributaries, Drip irrigation, Lift Irrigation Device with an existing perennial water source, lifting device
Water Management	Construction of Rain water harvesting structure
Farm Management	Elephant trench cum electric fencing to protect villagers from elephants, trench cum bund (TCB), Organic Drum Fertilizer, Azolla Pit development, Vermi composting units construction, Construction of Low-Cost Poly nursery as a demonstration of Nursery development, Sprayer, Heavy duty earth auger
Clean Energy	Solar lighting system for village street and meeting places

4.2.1. Effectiveness and Impact

This section provides an overview of the effectiveness of the project activities and their contributions to the outcomes defined in consultation with HDFC Bank. The figure below highlights the impact level attained for defined outputs. The impact under each category is calculated based on the average of output indicators under each activity category and a detailed overview of the project impact (for all thematic areas) is attached in the Annexure.

Figure 8: An overview of project effectiveness and impact in NRM⁹



Income from agriculture

In the survey sample, the benefits from agricultural activities were availed by about 45 % of the total respondents. The interventions around **crop diversification, GAP cropping, lift irrigation and**

⁹ 100%-70% - High impact; 40%-70%- Medium impact, <40% - Low impact

drip irrigation, and pesticides/fertilizers have been the most availed and practiced activities among all the agricultural activities conducted under the intervention.

As can be seen from the figure below (See Figure 9), there has been an **increase in the net median income by about 80%¹⁰ and an increase in the gross median income by 100%¹¹**. Data also suggests that input price has also increased by 67% (from Rs. 4500 to Rs. 7500) but the increase in the gross income is far greater than the increase in the input cost, thus leading to a rise in the net income trends.

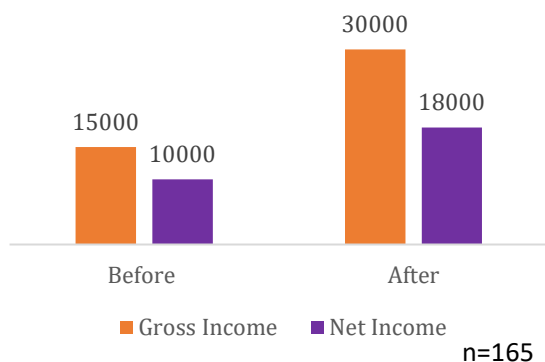


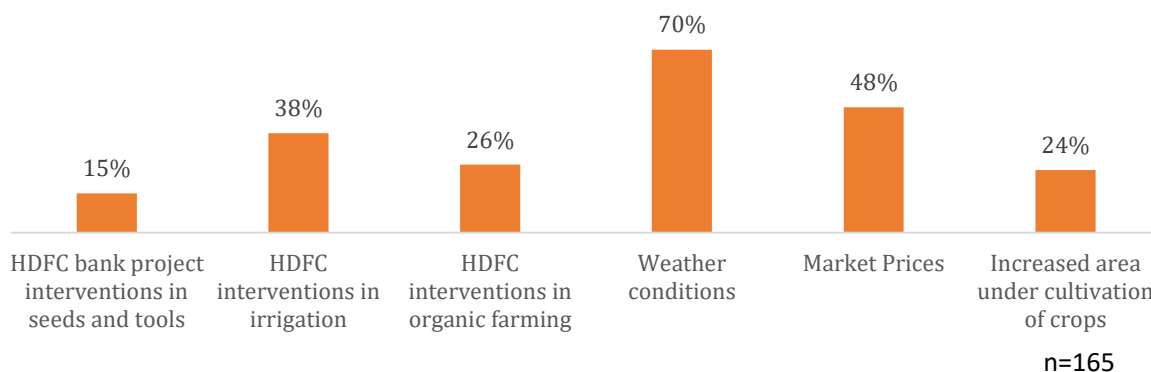
Figure 9: Increase in agricultural income

The reasons for the increase in net income can be credited to the impact of various interventions around income-generating activities. Respondents reported **an increase in the productivity of the crops that were supported under the interventions of the HDFC Bank programme, mainly due to HDFC Bank’s intervention in irrigation and organic farming, and also favourable weather** (See Figure 10). Qualitative

findings also substantiate these claims as the farmers expressed their immense satisfaction with the irrigation facilities made available to them. They have **increased the area under irrigation and are now producing more quantity of food**. Drip irrigation has also helped the farmers improve production, cover more area of land in less time and maintain soil quality. **They also highlighted that because of the vegetable seeds made available to them, they have saved a lot on input costs**.

Moreover, about **58% of the beneficiaries have also adopted crop diversification practices supported by the HDFC Bank programme and are satisfied with the same**. During the duration

Figure 10: Reasons reported for increase in income



of the project, there has been a **21% increase in the percentage of farmers having irrigated land as the numbers increased from 76% to 92%**. Median irrigated land increased from **1 acre to 2 acres**. Further, the interventions around the promotion of the use of natural fertilizers have led to an

¹⁰ The increase reported is statistically significant at 95% confidence interval.

¹¹ The increase reported is statistically significant at 95% confidence interval.

increase in the adoption of natural fertilizers with **64% of the beneficiaries reporting an increase in usage of natural fertilizers after the project interventions**. Field observations noticed the usage of neem spray fertilizers promoted under the programme. **However, although the use of natural fertilizers has increased, it hasn't necessarily brought a drop in the usage of chemical fertilizers and a majority of the respondents reported using both chemical and natural fertilizers in farming**. Since paddy is the main crop cultivated in the area, weather conditions and market prices have been largely responsible for an increase in farmers' income. However, as found from qualitative analysis, **HDFC Bank interventions in organic farming, irrigation, and seeds and tools have been very helpful in increasing the income from vegetables**. Interventions in **organic farming and irrigation have been the major contributors to the increase in the productivity of the main crops cultivated in the district while the weather has been the main reason for a decrease in productivity of the crops**.

Figure 11: HRDP interventions that contributed to an increase in crop productivity ¹²

Intervention	Crop			
	Rice	Moong	Other Vegetables	Chilly
HDFC Bank intervention in irrigation	39%	46%	50%	75%
HDFC Bank intervention in organic farming	22%	27.0%	50.0%	25%
Weather	82%	91%	93%	50%
The increased area under cultivation of crops	14%	36%	7.0%	11.4%
HDFC Bank intervention in seeds and tools		27%	14%	75%

The median productivity for 3 major crops (paddy, moong, and other vegetables) has increased from 1167 kg/acre to 1675 kg/acre (44% increase)¹³.

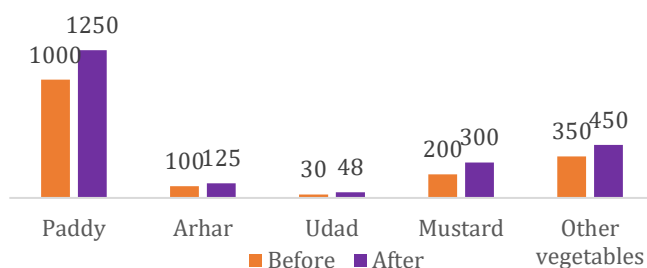


Figure 12: Average production of crops grown (in Kg)¹⁴

Moreover, due to the project interventions and its stress on promoting crop diversification, more farmers have taken up the cultivation of different crops that they did not grow before the project. For instance, **21% of the farmers are**

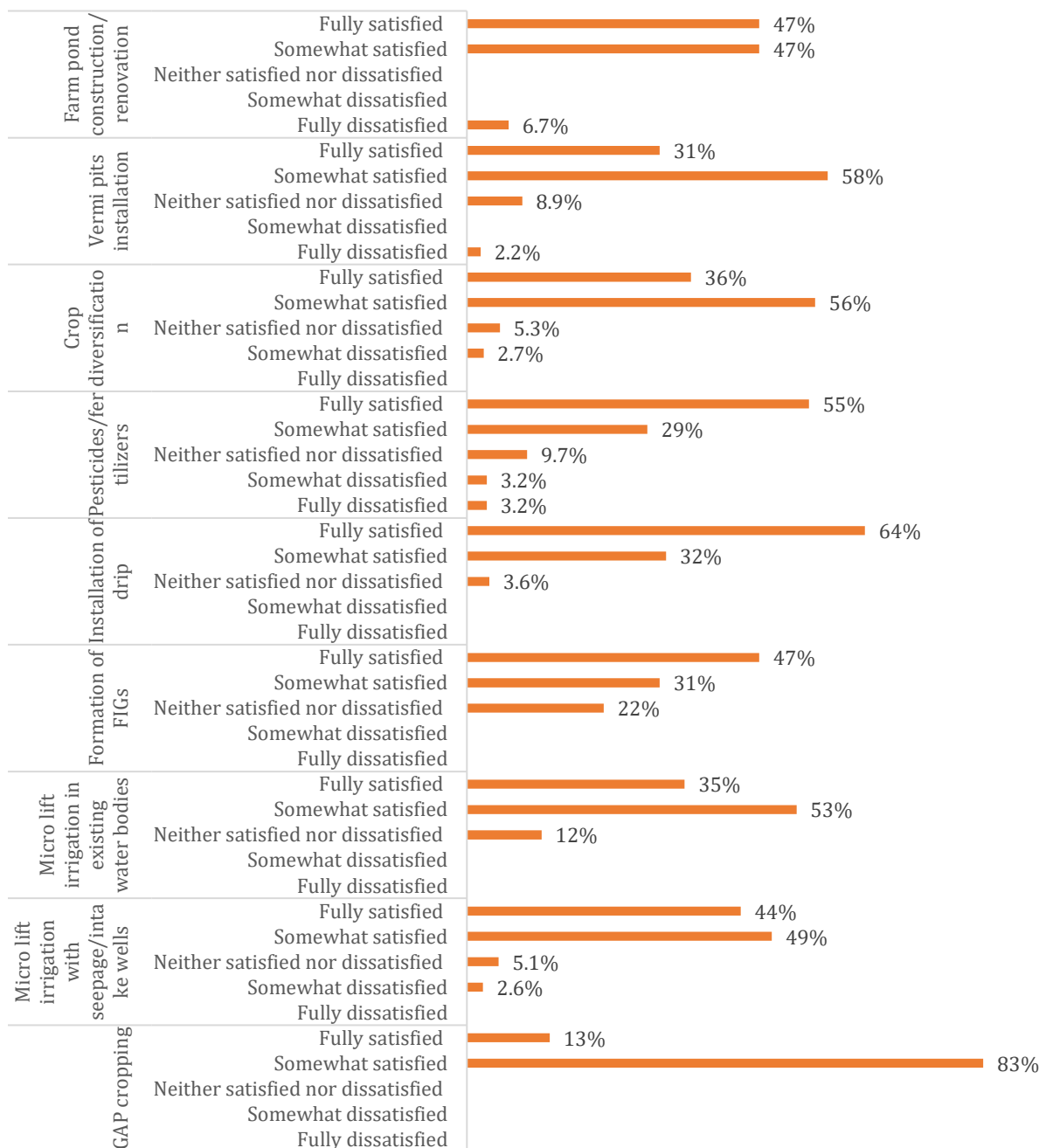
now growing chilly as compared to 3.8% of farmers before the project (453% increase). Similarly, farmers growing vegetables have also seen an increase as the numbers rose from 11% before the project to 47% after the project (327% increase).

¹² Base is the number of farmers reported to be cultivating each crop.

¹³ The increase reported is statistically significant at 95% confidence interval.

¹⁴ Base is the number of farmers reported to be cultivating each crop.

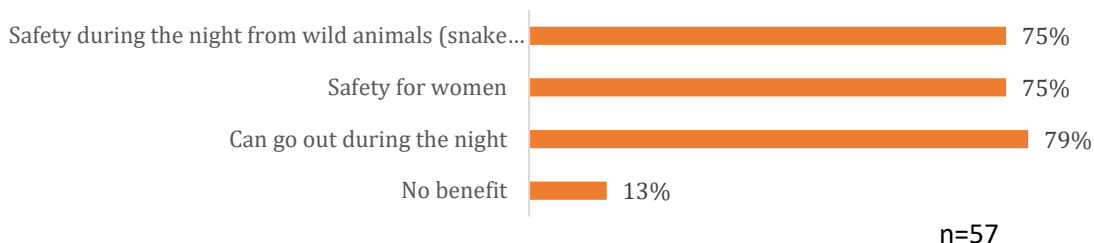
Figure 13: Level of satisfaction with HRDP NRM interventions



Use of clean energy solutions

The villages of the state face the challenge of having a constant electricity supply, especially during the rainy season, and therefore, the programme installed solar street lights. However, **14% of the respondents reported being supported by the lights**. Of this, **65% reported the street lights being operational**. These lights have brought benefits for village people in the form of providing safety during the night from wild animals, safety for women (93%), and ease in going out during the night (91%).

Figure 14: Perceived benefits of solar street lights



4.2.2. Case Study

Shivcharan Alda is a farmer who owns agricultural land in the Hathimanda village of Jhinkpani. A few years ago, he would often lament that he was not able to fully utilize his three acres of cultivable land to grow crops, because of limited access to irrigation. He made use of the pond which was 8-10 feet deep and dried up during the summer season. He also did not have a pump to draw water from the pond as a result of which only a small piece of land got irrigated. But a switch to the pumpset in the well, provided by HDFC bank in 2019, changed things for him.

Before, he produced 1,500-2,200 kilograms of paddy (rice) and vegetables on his land. Paddy production was mainly dependent on rainwater which was unpredictable. However, after the installation of the pump in early 2019, he has been able to double his production as he can now control the amount of water needed for irrigation. Further, due to the increase in irrigated land and the good returns, his income from vegetables has also increased from ₹50,000 to ₹1, 50,000.

“Water is the most important resource for a farmer. If water is available for irrigation, we will be happy.”- Alda

Similar to Hathimanda, there are many other farmers in the other villages of Jhinkpani who, due to lack of irrigation facilities, were unable to utilize their entire agricultural land for sowing crops. Many are now using the lift irrigation facilities provided to them under the programme and are quite satisfied with the returns. Drip irrigation has also proved to be very effective for farmers supported with the same as the entire land is irrigated all at once and requires less time and effort.

Image 6: Drip irrigation under HRDP



4.3. Skill Training and Livelihood Enhancement

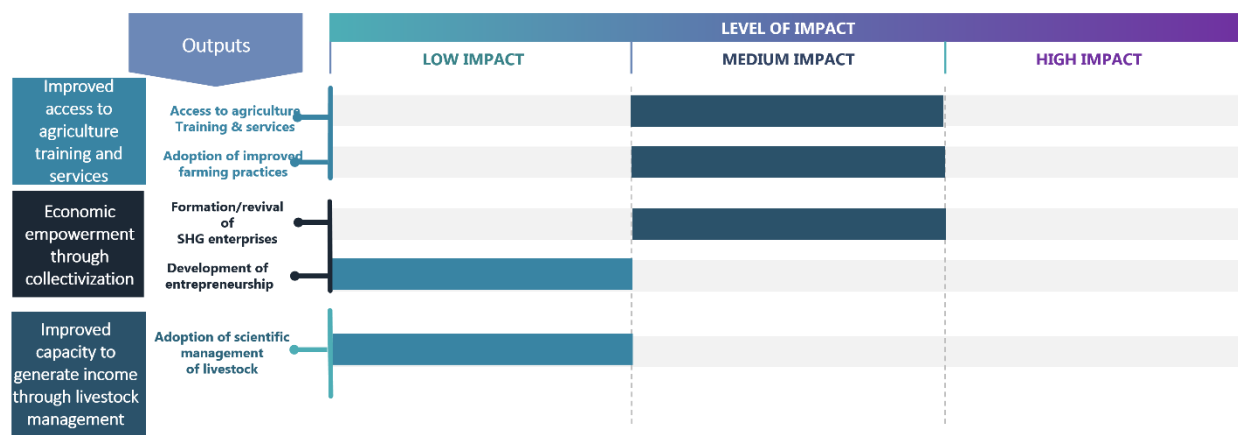
Table 6: Activities under skill training and livelihood enhancement in Jharkhand

Activity Category	Activities
Agriculture Training and Support	Leadership Building Workshops with Farmers, Promotion of horticulture Multi-Tier cropping System for enhanced livelihood, Promotion of Farmers Interest Group (FIG), Capacity building of VCs in facilitation skills of annual crop planning, Training in Integrated Soil Nutrient Management (INM), Integrated Pest Management (IPM) and production of organic insecticide and pesticide, organic fertilizer production, soil-less nursery development and management, crop PoP linked to cropping, drip irrigation and mulching technology, Vegetable production cluster, exposure visits, GAP cropping
SHG-Based Women Empowerment and Entrepreneurship Development	Puffed rice technology equipment support and training with packaging and marketing, tamarind (NTFP) value addition and packaging with marketing exposure and formation of producer group (Tamarind Processing and Packaging- Manual unit), manufacturing unit of reusable cotton sanitary pads
Livestock Management	Backyard poultry development, Duck rearing
Economic Empowerment through collectivization	Promotion of Farmers Interest Group (FIG)

4.3.1. Effectiveness and Impact

The figure below is a pictorial representation of the project’s impact in skill training and livelihood enhancement.

Figure 15: An overview of project effectiveness and impact and skill training and livelihood enhancement



Agriculture training and services

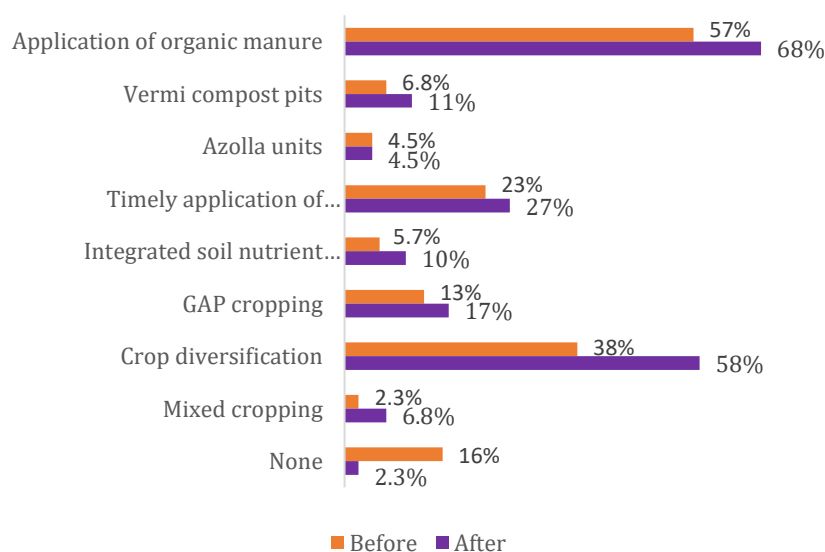
Surveyed households have benefited from training on agriculture practices (85%), field demonstrations (35%), and exposure visits (24%). Moreover, 18% even received support from

farmers' associations/groups. However, **the reach of the intervention was less as only 22% of the total sampled beneficiaries received benefits under agriculture training and support.**

HDFC bank training and farmer field schools have made the farmers aware of sustainable farming practices like application of organic manure (74%), crop diversification (50%), construction of vermi-pits (33%), and timely application of fertilizers and insecticides (25%).

Various training sessions were organized to build/enhance farmers' skills but the effect has not been too high. **The respondents reported attending farming techniques training (35%), training on nature farming (40%), and training in field school (48%).** Of those who attended the training, 47% found it very useful and another 49 % found it useful. During some qualitative discussions, it was found that **the seeds given under the programme are not compatible with organic fertilizers and so they have to continue using chemicals.**

Figure 16: Respondents practising different practices



Nevertheless, **the training has been useful in improving their capacity to increase productivity (69%), awareness of sustainable farming practices (39%), and reduction in crop loss (24%).** However, very few farmers reported their help in input cost reduction (29%). Through this training, farmers learned about the application of organic manure (65%), crop diversification (59%), timely application of fertilizer and

insecticide (27%), construction of vermi pits (23%), GAP cropping (19%), integrated soil nutrient management (17%), and Azolla unit (11%).

Although, there has been an improvement in the practices done before vis a vis the practices adopted after the intervention, the change is not too significant as can be seen from Figure 12.

Those practicing farming practices have noticed improvements in the form of an increase in productivity (67%), an increase in income (83%), and ease of farming (38%). Benefits in the form of improved soil health (14%) and reduction in input cost (9.3%) were not observed by most farmers. However, qualitative data suggests differently as farmers stressed that the shift to organic fertilizers and pesticides saw an improvement in the soil quality.

Data shows that the median annual income increased due to the skills learned to ₹22,000. Moreover, as found out during the survey, some farmer interest groups have also been established in the intervened villages. 63% of the respondents highlighted that they were members of a farmer group/association, of which 82% % said that the group was established under the HRDP project. The group has reported receiving support from the programme mainly in the form of mobilization for

group formation (86%), group training (42%), registration of group (56%), market linkages (18%), and bank linkages (9%). Reduced risk in farming (49%) was highlighted as the major benefit of being project supported group member. However, the figures for other forms of benefits like easy availability of inputs (15%), improved input efficiency (13%), an additional source of income (20%), and improved access to the market (22%) were reported to low and 33% of the farmers even reported gaining no benefits.

Figure 17: Agriculture practices learned and adopted through HDFC Bank training

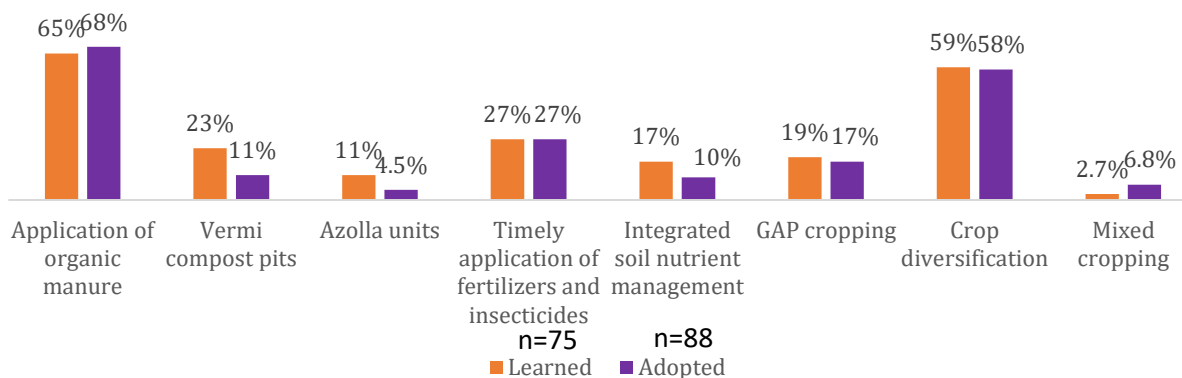
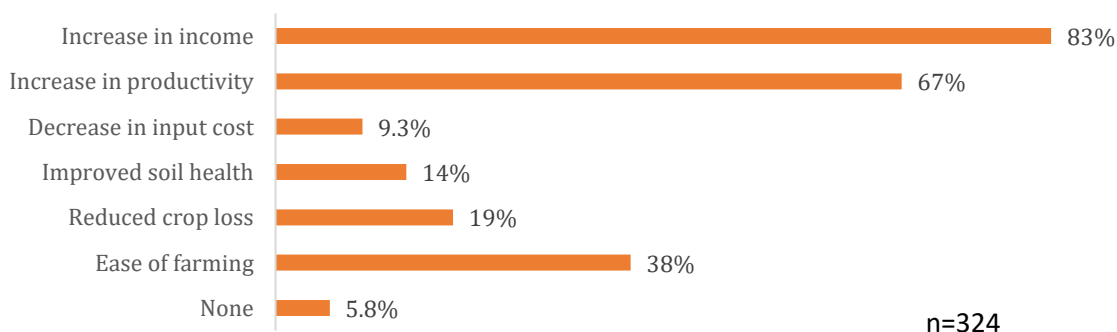


Figure 18: Perceived improvements due to the adoption of agricultural practices

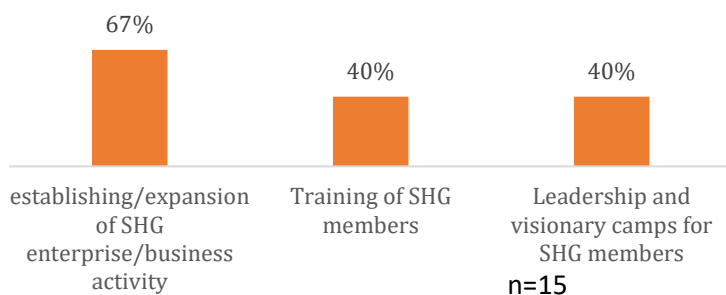


Skill Training and Enterprise Development

The state has seen the establishment of SHGs under the Jharkhand State Livelihood Promotion Society. The SHGs were doing their lending and borrowing. The effort of NEEDS as part of the project was to provide better skills and abilities to the poor and marginalized women of the SHGs in the area of employment and income-generating activity. Therefore, cotton reusable pads, puffed rice, and tamarind processing units were set to benefit the SHG members.

However, qualitative analysis shows that none of the units were operational after the end of the programme. The women involved in cotton reusable pad making discontinued the process of making pads as they didn't attract any buyers due to their high price (₹22/piece) and the problem of drying the cloth.

Figure 19: Project support provided to SHG members under HRDP



Similarly, the puffed rice enterprise also lasted only for 5-6 months as the workers faced problems with access to electricity and drying of the rice. The challenge of having a reliable power source was also faced by the tamarind processing unit which also shut down after a

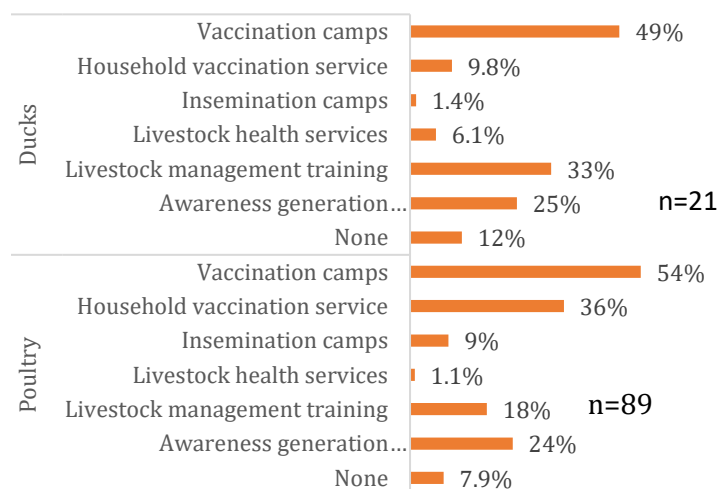
year of its operation.

In terms of income, **only 33% noticed an increase in income due to the SHG enterprise established under the project** and 67% reported no change because of reasons like “loss at business” and “not actively involved in SHG enterprise activity”. Therefore, **the median monthly personal income from SHG enterprise decreased from ₹2000 to ₹1750¹⁵**.

Livestock Management

The organization provided ducks and backyard poultry birds under the project. As per the findings, 70% of the respondents received project services for ducks and 29% of the respondents for poultry. For the management of livestock, beneficiaries received services like vaccination camps, livestock management training, and awareness generation campaigns. This was also highlighted in the interviews where the beneficiaries were informed about medicines being made available to them to look after their livestock.

Figure 20: Livestock management services availed through HRDP



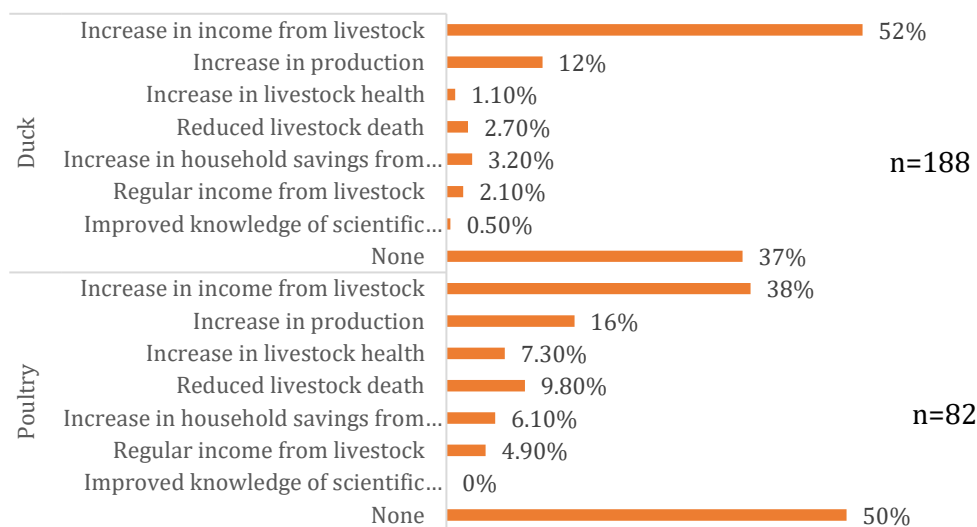
The information provided to the beneficiaries and the intervention, as a whole, has resulted in some benefits for a proportion of the community. As per our analysis, an increase in income from livestock was reported as the primary benefit gained through the activities of ducks (52%) and poultry (38%). However, 37% of beneficiaries of ducks and 50% of beneficiaries of poultry reported not gaining any benefits probably because of livestock death.

While some reported that the intervention was effective in providing them with an alternate source of income and nutrition and they were satisfied with the same, some didn't agree with the same as

¹⁵ Please note that only people who reported income figures were taken to calculate the change in the income from SHG enterprise.

most of their ducks/chicks died. Nevertheless, the community still reported a **34% increase¹⁶ in median monthly income from livestock as their income increased from Rs. 372 (before the project) to Rs. 498 (after)¹⁷**. As per qualitative discussions, 1 duck was sold for around ₹350 and 1 egg was sold for Rs.10.

Figure 21: Perceived primary benefits of livestock interventions



4.3.2. Case Study

Tamarind Processing and Packaging- Manual unit

Parvati Devi belongs to the village of Tirilpi and has been a member of an SHG group. There are many big and medium sized Tamarind trees around the village and NEEDS worked in this village with the women SHG members from different groups for food processing and value addition of local tamarind. Parvati highlights that a unit was set up and a tamarind brick making machine was provided to the group. However, the machine couldn't be put to much use due to erratic supply of electricity, poor voltage and no proper training. Women were involved in de-seeding tamarind, brick making, and packaging. However, the product wasn't of quality as they had to make use of sockets instead of the machine for brick making, which did not dry well during the rainy season. There was no proper market linkage and no proper training on how to do business, where to sell the product, they faced losses. However, they really wanted the business to sustain and worked hard. Women moved to packaging tamarind in packets instead of making bricks and sold the product in Chaibasa but the producer group members kept reducing with time and the operations of the group eventually ended. Moreover, the seasonality of the fruit created further challenges in sustaining the business. Although, NEEDS did arrange solar power infrastructure to deal with the problem of electricity but the closure of the project soon after its installation could not result into anything fruitful.

¹⁶ The increase reported is statistically significant at 95% confidence interval.

¹⁷ For calculation of income, only the people who reported an income were considered. However, please note that a considerable proportion of the beneficiaries reported no income.

4.4. Health and Sanitation

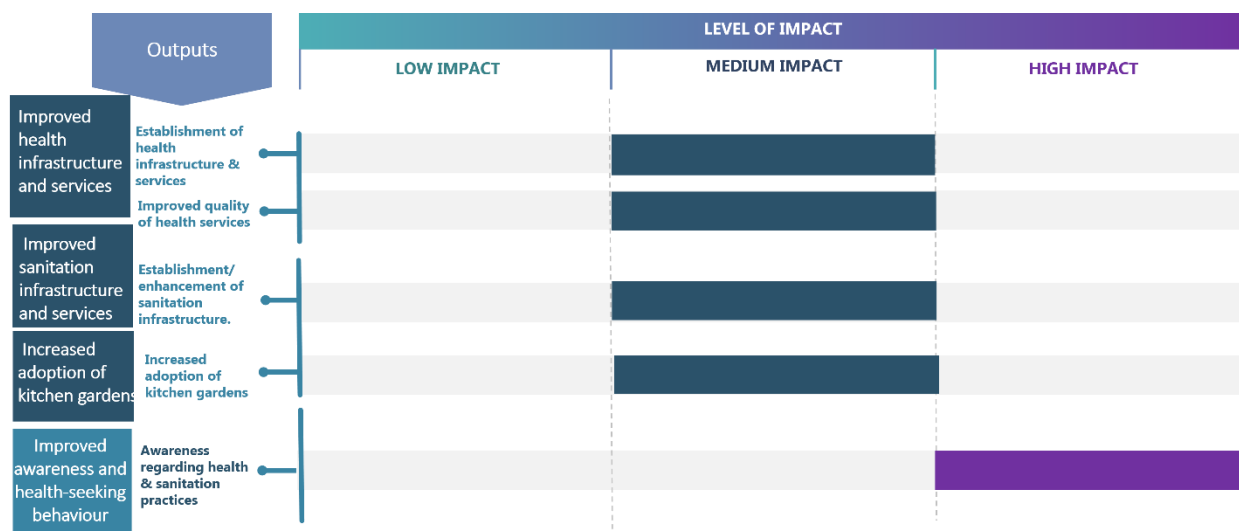
Table 7: Activities under health and sanitation in Jharkhand

Activity Category	Activities
Health	Village Health Camp - Health Profiling and Health awareness, Participatory Learning Application (PLA) on nutrition management, Nutrition Management (training of AWC workers, Orientation of parents every village), Capacity building of AWW and project team members, Capacity building on improving sanitary practices, Menstrual Hygiene education of young women and awareness building, (Demonstration of Hand washing & Hygiene and behaviour change & MHM Session in School)
Sanitation	Construction of Platform of Hand pump & Soak pit, Construction of Individual House Hold Toilets (IHHL), Community Triggering (CLTS) & formation of nigrani samiti, World Toilet Day- Rally
Kitchen Garden	Develop kitchen garden to improve nutrition level

4.4.1. Effectiveness and Impact

The figure below is a pictorial representation of the project's impact in health and sanitation.

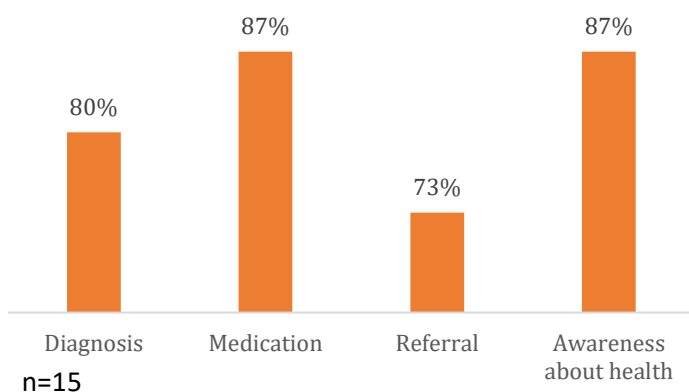
Figure 22: An overview of project effectiveness and impact on health and sanitation



Health infrastructure and services

The programme had a component of creating awareness around health to increase health-seeking behaviour among the community and also to provide health services to the community. Health camps were facilitated in the project villages of Jhinkpani, where the activity of health check-ups was organized. The health camps gave comprehensive data and information regarding the disease occurring within the community. The health camps undertook awareness-raising work around health-related concerns and also provided referrals, medications, and performed diagnoses.

Figure 23: Services availed at HDFC Bank-supported camps

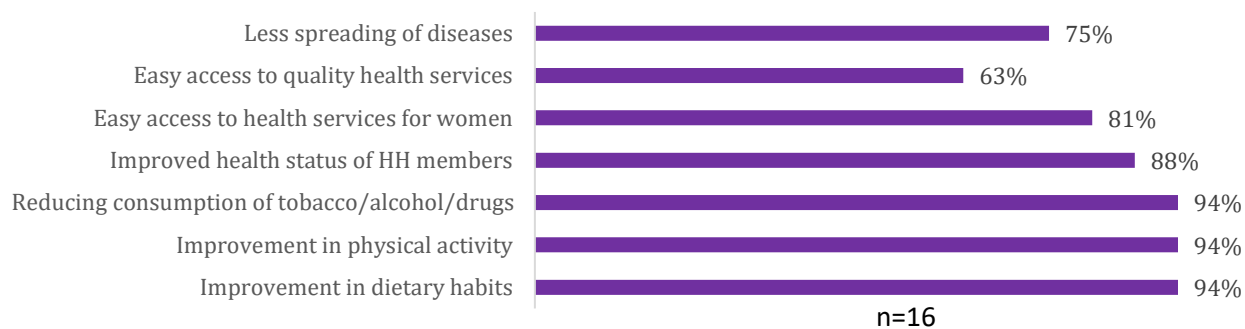


The survey shows that **only 4.6 % of the sampled beneficiaries availed of health services under the programme**. Of this percentage, **68% of the respondents availed health camps and hygiene-related awareness sessions** in the last year under the HDFC Bank intervention. About 74% and 63% of the respondents also availed nutrition management and menstrual hygiene

education respectively. The qualitative interactions highlight that though the camps were organized, not everyone was available to attend them which was possibly the reason for fewer beneficiaries under health and sanitation.

The respondents surveyed stated that they or someone in their household has observed a change in lifestyle after attending the health camps and awareness sessions. They have observed an improvement in dietary habits (94%), physical activity (94%), the health status of household members (88%), easy access to quality health services (63%), less spreading of diseases (75%) and decreased consumption of tobacco/drugs/alcohol (94%).

Figure 24: Perceived benefits of HDFC bank-supported health camps

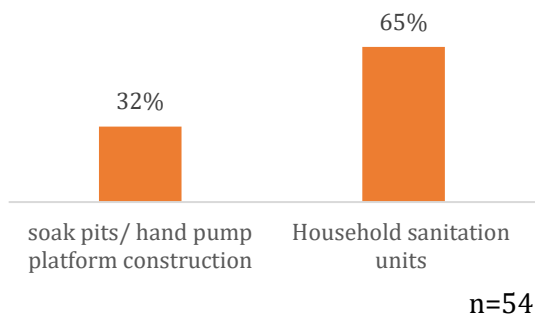


However, while the camps have benefitted the community, more efforts need to be made towards imparting awareness around the importance of family planning due to the problem of malnutrition in children.

Sanitation infrastructure and services

The programme supported the community with sanitation facilities and 13% of the sampled beneficiaries benefitted under this category. Of this 13%, about 65% of the respondents were provided sanitation units. The programme undertook the construction of toilets at the household level which was done in collaboration with the Swachh Bharat Mission.

Figure 25: HDFC bank supported sanitation services



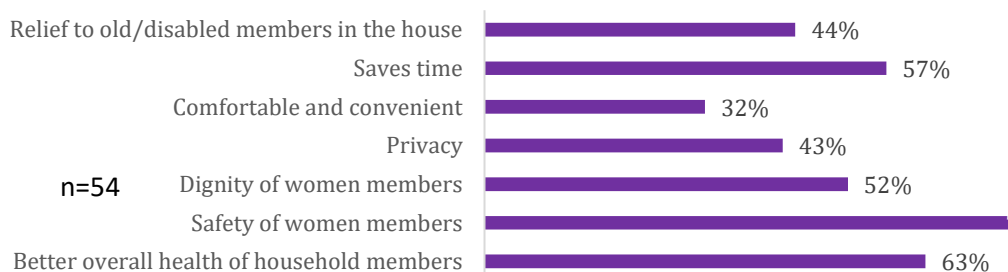
Before the intervention, most of the households practiced open defecation (82%). However, after the initiative of HRDP, 98% of the households reported using individual toilets as compared to 18%, before the intervention. However, as found out during the qualitative discussions, the community still practices open defecation. This was even true for households that have their toilets. This finding highlights the need to not just focus on making the infrastructure available to them

but also make efforts to study the traditions and culture being practiced by the community.

Further, **32% of the beneficiaries also reported having soak pits/hand pump platforms** being made available to them and their households for waste water management as the community was subjected to diseases like malaria, diarrhoea, and filariasis.

Due to the sanitation units made available to them, the beneficiaries have reported several benefits as can be seen in the figure below. Basis qualitative analysis, the beneficiaries are also satisfied with the services they received and the quality of the available sanitation facilities.

Figure 26: Perceived benefits of HH sanitation units



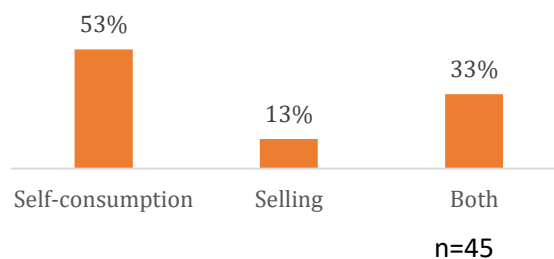
As highlighted above, although toilets were made available to the community and there are claims of the villages being open defecation free, this is far from reality.

Kitchen Garden

To improve the nutritional status of the community and tackle the problem of malnutrition, especially amongst children and women, the project undertook the activity of a kitchen garden where the beneficiaries were supported with seeds (89%), training (53%), fertilizers and pesticides (13%), and demonstrations (11%).

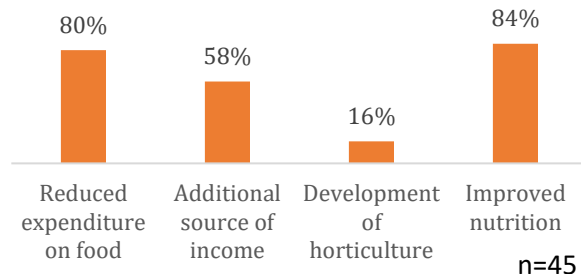
Figure 27: Utilization of kitchen garden produce

They received support for a variety of vegetables such as beans, brinjal, tomato, lady finger, peas, bottle gourd, etc. **The majority of the**



respondents were found using the produce from their gardens for self-consumption (53%), and some were using it for both self-consumption and selling purposes (33%). The ones involved in selling the produce reported a median monthly income of ₹500.

Figure 28: Perceived benefits of HRDP supported kitchen gardens



Findings show that the amount spent on buying fruits and vegetables since the project started decreased for 69 % of the households who use vegetables for self-consumption. Moreover, the quantity of consumption of fruits and vegetables from the kitchen garden since the project also increased for 72 % of the respondents. The respondents saved around ₹200 every week

on buying fruits/vegetables. Where vegetables were sold, respondents earned a median weekly income of about ₹300. Moreover, the community is even aware of the benefits of having a kitchen garden as can be inferred from the figure and 84% of the beneficiaries seemed satisfied with the intervention.

Awareness and health seeking behaviour

The programme undertook multiple interventions for improving awareness of nutrition management, and cleanliness practices one must practice daily. 74% of the respondents stated using toilets instead of open defecation and 91% reported washing hands using soap after using toilets as a cleanliness practice to be followed daily. These findings are backed by qualitative interactions with the **Anganwadi workers (AWWs) who informed that they are seeing a gradual change in the community in terms of health and hygiene practices.** She informed that the community members were uninformed about the importance of nutrition and cleanliness in their lives before the HDFC Bank intervention and therefore, **HDFC Bank awareness sessions and friends and relatives (75%) have been the primary sources from where the community learned about the same.** The AWWs even expressed their appreciation for the information and training they received under the programme.

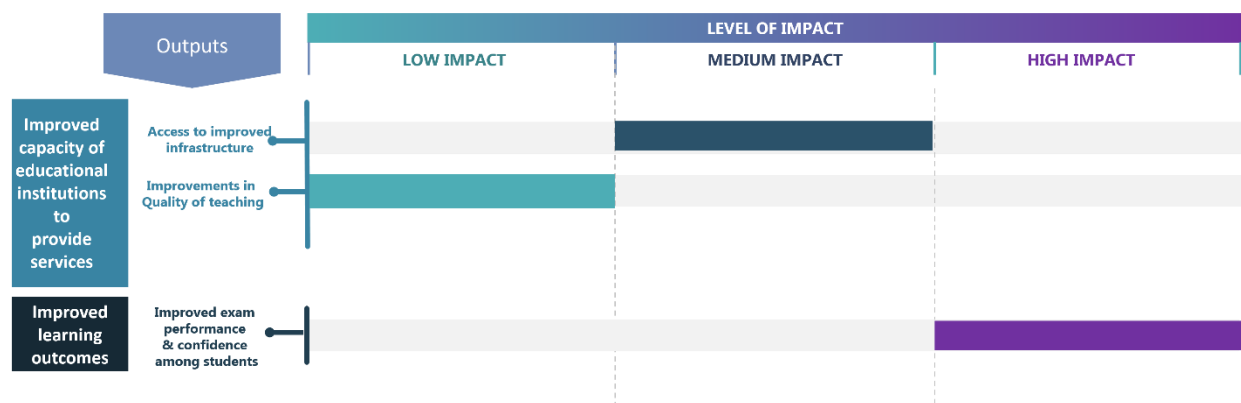
4.5. Promotion of Education

Table 8: Activities under education in Jharkhand

Activity Category	Activities
Educational Institutions Development	Library, Smart classes in school, School Infrastructure improvement, Teacher Learning materials, Making AWCs child friendly
Education Support	Remedial coaching in intervention villages for quality of education (Anandshala)
Sports	Sports for Education (Archery, Football, and life skills), girls trained in archery

4.5.1. Effectiveness and Impact

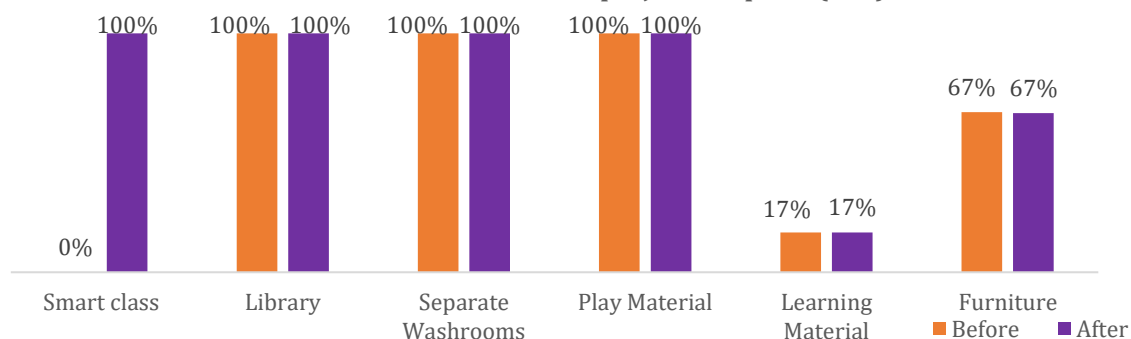
Figure 29: An overview of project effectiveness and impact on Education



Educational Institutions

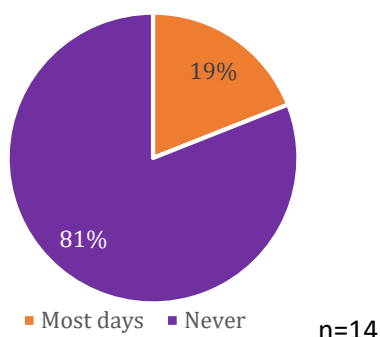
A combination of multiple activities targeted toward improving enrolment, attendance, and learning outcomes were undertaken in the programme area of Jhinkpani. The programme focused on equipping schools with infrastructure such as basic furniture, smart-class, separate washrooms for boys and girls, and renovation based on the need of the school. The programme has also helped in providing training and supporting teachers in improving learning outcomes.

Figure 30: Infrastructural services available before and after project inception (n=8)



As highlighted in the figure above, the smart class was the only intervention that was completely new for the project areas. However, when looking at the effects the intervention had on children's education, the results were unsatisfactory. 85% of the teachers reported not using smart classes because they were either not in working condition (24%), the teachers did not have the time to operate it (24%), or they were not sure how to operate it (53%). These findings were seconded by the students **who said smart classes were never used (81%) mostly because teachers didn't seem interested in using them (98%) (ref. fig 31). Based on the qualitative interaction, it was found that most teachers did not get any proper training on operating the device, and therefore, they didn't show much interest in making use of it. However, the students who did have a chance to use smart class liked learning from the same as according to them, it made the lessons more interesting, and easier to understand and remember.**

Figure 31: Usage of smart class as reported by students



The furniture received by the programme was also reported to be in working condition by the teachers (100%). A corner in the classroom in school is designated for a library but only 23 % of the students reported making use of this facility on most days. A majority of the students used it only sometimes (74%). The library has benefitted only a few children in improving reading habits (36%) and in reading material beyond the syllabus (64%).

Having a proper sanitation facility is a crucial factor in maintaining school attendance. As highlighted by the students, the construction/renovation of toilets in school has helped them in attending school regularly (93%) and the toilets are being used by them every day. Although, water supply in the toilets is still an issue in certain schools due to the incidence of theft of electric motors installed.

In terms of receiving learning and play material materials, only one school reported receiving them. Teachers did receive some capacity-building support as per the findings. They received training on innovative teaching methods (67%), training on teaching material development (57%), and computer/digital training (38%).

Facilities like sports training for adolescent girls were undertaken by the programme where they were taught archery and football. Interactions with some adolescent girls who went for the training highlighted their fondness for the sport. They even won medals at the district and state levels. However, after the completion of the programme, there was a fall in the participation rate of girls in archery as the training was no longer free.

Qualitative discussions with teachers found that per day, the attendance rate is 60-70 % in schools and student enrollment has increased for both boys and girls as compared to the previous years due to increased awareness among parents. Drop out of girls has also fallen. However, since the community here is extremely poor, schools notice a general drop in attendance during the farming season as children go to assist their parents in the field. Furthermore, the Anandshala initiative

helped enroll school dropout girls with NIOS (National Institute of Open Schooling) and finish school. This has had an impact on reducing the cases of child marriage in the intervention area.

4.5.2. Case Study

Surjabasa, a tiny village in West Singhbhum district of Jharkhand emerged as a centre of young girl archers during the last four years as it produced district, state and national players who have secured 11 medals in national, state and district level championships.

Khushbhu comes from a tribal village of Tutugutu. She was one of the adolescent girls who received training in Surjabasa and even participated in the district level championship. She informed how the game was all new to her but once she started, she really liked it. The glee in her eyes could actually hold testimony to the fact but she sadly had to discontinue with the practice after the end of the programme. With a sigh she said **“I wanted to learn more but unfortunately couldn’t because I come from a very poor family.”** This was the case for many other girls as the training went from being free to being available at a cost of ₹150 per month. This saw a drop in the participation of girls.

There are many other girls like Khushbu who are immensely talented archers living in the villages waiting for the right opportunity. The state government could help in this regard by providing appropriate facilities with modern training and infrastructure free of cost so that these villages can produce archers of international level and make the country proud by winning medals at global sporting events.

4.6. Sustainability

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

Support provided	Structures established	Technical Know-how	Usage	Maintenance
Natural Resource Management				
Construction of a new pond	✓		✓	✓
Lift irrigation	✓	✓	✓	✓
Drip Irrigation	✓	✓	✓	
Construction of rainwater harvesting structure	✓	✓	✓	
Vermi composting unit	✓	✓		
Azolla unit	✓	✓		
Low-cost poly nursery	✓	✓		
Sprayer and lifting device	✓	✓	✓	
Installation of solar street lights	✓		✓	
Skill Training and Livelihood Enhancement				
Agriculture training and support	✓	✓	✓	
Formation of FIG	✓	✓	✓	
Backyard poultry development		✓	✓	
Duck rearing		✓	✓	
Enterprise Development	✓	✓	X	X
Health and Sanitation				
Health camps	✓	✓	✓	
Participatory Learning Application (PLA) on nutrition management		✓		
Hygiene and behaviour change training		✓	✓	

Menstrual health management training for adolescents and women		✓	✓	
Nutrition management training of AWWs and orientation of parents		✓	✓	
Capacity building of AWW		✓	✓	
Construction of individual household toilets	✓	✓	✓	
Construction of soak pit & platform for the handpump	✓	✓	✓	
Kitchen/Garden	✓	✓	✓	
Promotion of Education				
Library	✓	✓	✓	✓
Smart class	✓	✓	✓	
School infrastructure improvement	✓	✓	✓	✓
Teaching learning material				
Making Anganwadi centres child friendly	✓		✓	✓
Remedial coaching classes	✓	✓	✓	
Sports for Education	✓	✓	✓	✓

The sustainability of the interventions is looked at from the criteria of structures established, technical know-how, usage, and maintenance. The support provided for lift and drip irrigation has resulted in the continued usage of these irrigation facilities even after the closure of the project. Village Development Committees (asset guardians) and water user groups were formed to ensure the functioning of the irrigation infrastructure. However, **the VDCs have not been functioning actively and the maintenance work is usually done on an individual level.** Further, the ponds (*dobhas*) constructed to store rainwater are there for the usage of the farmers. Although vermi-pits/Azolla units/low-cost poly nurseries were constructed in the farmer field schools to give demonstrations to the farmers, their adoption and usage by farmers have been very limited. Since the VDC is not actively functioning in the intervened villages, the maintenance of solar street lights remains an issue.

The programme's **efforts to ensure a sustainable means of livelihood and income for women haven't transformed into positive results as any of the enterprises' established functions now.** Moreover, the number of **livestock birds provided was too little to ensure a continued source of**

nutrition/additional income. However, agriculture training and support provided have been effective with an increase in their knowledge of good agriculture practices and the importance of multi-cropping but the **usage of certain practices like SRI is still low** due to the intensive labour requirement. Moreover, **farm field schools are not continuing with their critical role** which has impacted the maintenance of the skills learned. The efforts to form a Farmer Producer Organization (FPO) only actualized at the end of the programme and therefore, **the producer organization is not functioning as there is no one to guide the farmers.**

With regard to education, **assets like the library, smart class, sports equipment, and furniture provided to the school have been handed over to the schools.** However, **the smart classes are not continued by the teachers** as they do not seem confident in their skills to operate the device which highlights the need for another round of training for the school teachers and staff. Moreover, sports education (archery) benefitted the adolescent girls who now have learned the skills of archery and football. **Archery training is continuing after the closure of the programme but the sport hasn't seen much participation from the students as it's no longer free.**

The health camps and behavioural change sessions have helped in increasing the community's awareness regarding nutrition and hygiene. Moreover, **the knowledge provided has stayed with them and AWWs have also played a crucial role in disseminating information to the community members.** Therefore, the involvement of community health workers and their capacity building has ensured that the right information reaches the people. However, although the programme undertook toilet construction, **the usage of these toilets by all community members is yet to be achieved due to socio-cultural and behavioural factors.**

4.7. Holistic Rural Development Index (HRDI)

According to the World Bank, there are multiple dimensions involved in achieving the goals of rural development and the resulting mixture raises agricultural production, generates new jobs, enhances health, increases communication, and provides better living infrastructure. Rural development is defined by the World Bank as the improvement in the social and economic environment of the rural population. Thus, 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.

HDFC Bank in its document explaining HRDI stated that since HRDP aimed to achieve holistic rural development through a multitude of interventions that would lead to overall improvements across related dimensions and therefore the programme introduced significant variability in the interventions. Therefore, it was not possible to ascribe a single impact indicator that might be able to accurately, capture the overall performance of HRDP. Since the index aimed to create comparability across the various blocks, similar indicators were used for the calculation of HRDI in Jharkhand. Based on our calculation, the HRDI for the studied clusters is presented in the table below.

Table 9: Holistic Rural Development Index for Jharkhand

Domain	NRM	Skill and Livelihood	Health and Sanitation	Education	Overall
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									HRDI	
HRDI Score	Baseline	Endline	Base line	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
	0.13	0.18	0.07	0.08	0.03	0.15	0.16	0.20	0.39	0.62
% Change	38%		14%		400%		25%		59%	

Since the program did not have an available baseline, it was captured through the recall method. The indicators were selected and assigned weights based on their relative contribution to the final expected outcome across all domain-wise interventions. While most of the indicators were found to be relevant for the study in Jharkhand, some needed modifications in accordance with the programme and also in accordance with the study design, and the information collected. The detailed methodology can be accessed in Annexure 6.4.

Further, the thematic-wise indicators were assigned 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 0.39.

5. Conclusion

5.1. Summary of Findings

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

The project interventions have been **effective in creating clear changes in the income of farmers through improved productivity, provision of seeds and irrigation facilities, and innovative agricultural practices.** Farmers' income was very low because of poor or no irrigation facilities in the difficult topography of the region.

Within skill and livelihood enhancement, the project activities brought **economic opportunities for farmers and SHG women.** These beneficiaries were supported by the establishment of manufacturing units. They received raw materials, physical capital, and technical support, however, none of the enterprises could sustain itself for more than a few months. Support provided through livestock birds turned out to be fruitful for some women beneficiaries mainly from the additional source of nutrition perspective. Due to the small number of birds received, the intervention did not promise high-income returns to the beneficiaries and a significant proportion of birds died before they could reap any benefits of them.

The health interventions aimed at facilitating access to health and sanitation services have been **effective in terms of improving household health status and bringing about positive lifestyle changes. However, creating a community open defecation free is still a concern along with tackling the problem of malnutrition.** Although the adoption of kitchen gardens has contributed to improved dietary diversity and a reduction in expenditure on vegetables for a few households, this intervention needs to be scaled up.

Lastly, to bring about positive learning outcomes in schools, the project undertook the task of **improving/enhancing the infrastructural and learning environment at schools.** Several project interventions were undertaken including the installation of smart classes, a mini-library, and construction/renovation of separate washrooms for boys and girls, etc. However, these interventions haven't had a direct impact on increasing attendance. The smart classes installed to achieve better and quality learning are not being put to use. Moreover, the sports training turned out to be a great initiative resulting in high participation rates among girls. However, efforts for working with the government departments are needed to help the girls continue with the sport and build their skills.

5.2. Recommendations

NRM

- A follow-up is needed to see that all facilities made available for irrigation are functioning properly and to restore the defunct water user groups for the management of the irrigation systems.

Promotion of Education

- Convergence with district authority for the development of a sports centre where students can be trained free of cost.
- Capacitating the school teachers and staff for operating smart classes and making efficient use of the resource.
- Need for more initiatives like Anandshala as the community has high children dropout rates and active involvement of School Management Committees.

Health and Sanitation

- Exploring ways to tackle the socio-cultural factors constraining the usage of toilets.
- More assistance is needed to improve the nutritional levels in the community.

Skill Training and Livelihood Enhancement

- Handholding support for FPO so they have marketing tie-up, linkages with NABARD schemes, digital marketing channels, training on company operation, etc.
- More income-earning opportunities for women, preferably year-round business opportunities.

6. Annexures

6.1. Detailed Activity List

Activity Category	Activities
NRM	
Water Management - Agriculture	Construction of New Pond, Construction of Masonry Check dam, Setting up micro lift irrigation system with the excavation of seepage/intake wells, Setting up micro lift irrigation system in existing river/tributaries, Drip irrigation, Lift Irrigation Device with an existing perennial water source, lifting device
Water Management - General	Construction of Rain water harvesting structure
Farm Management	Elephant trench cum electric fencing to protect villagers from elephants, trench cum bund (TCB), Organic Drum Fertiliser, Azolla Pit development, Vermicomposting units construction, Construction of Low-Cost Poly nursery as a demonstration of Nursery development, Sprayer, Heavy duty earth auger
Clean Energy	Solar Lighting system for Village street and meeting places
Skill Training and Livelihood Development	
Agriculture Training and Support	Leadership Building Workshops with Farmers, Promotion of horticulture Multi-Tier cropping System for enhanced livelihood, Promotion of Farmers Interest Group (FIG), Capacity building of VCs in facilitation skills of annual crop planning, Training in Integrated Soil Nutrient Management (INM), Integrated Pest Management (IPM) and production of organic insecticide and pesticide, organic fertilizer production, soil-less nursery development and management, crop PoP linked to cropping, drip irrigation and mulching technology, Vegetable production cluster, exposure visits, GAP cropping
Livestock Management	Backyard poultry development, Duck rearing
SHG-Based Women Empowerment and Entrepreneurship Development	Puffed rice technology equipment support and training with packaging and marketing, Tamarind (NTFP) Value addition and packaging with marketing exposure and formation of producer group (Tamarind Processing and Packaging- Manual unit), Manufacturing unit of reusable cotton-based sanitary pads
Economic Empowerment through collectivization	Promotion of Farmers Interest Group (FIG)
PROMOTION OF EDUCATION	
Educational Institutions Development	Library, Smart classes in school, School Infrastructure improvement, Teacher Learning materials, Making AWCs child friendly,
Education support	Remedial Coaching in intervention villages for quality of education (Anandshala)

Sports	Sports for Education (Archery, Football and life skills), Girls trained in archery
HEALTH AND SANITATION	
Health	Village Health Camp - Health Profiling and Health awareness, Participatory Learning Application (PLA) on nutrition management, Nutrition Management (training of AWC workers, Orientation of parents every village], Capacity building of AWW and project team members, Capacity building on improving sanitary practices, Menstrual Hygiene education of young women and awareness building, (Demonstration of Hand washing & Hygiene and behaviour change & MHM Session in School).
Sanitation	Construction of Platform of Hand pump & Soak pit, Construction of Individual House Hold Toilets (IHHL), Community Triggering (CLTS) & formation of nigrani samiti, World Toilet Day- Rally
Kitchen Garden	Develop kitchen garden to improve nutrition level

6.2. Sampling Methodology

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

6.2.1. Quantitative Sample Size Calculation

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

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

Where,

N = sample size

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

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

S_e = margin of error, set at 5%;

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

Thus, the estimated maximum sample size is 400.

Quantitative Sampling Methodology

10 programme 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 programme. This list was obtained from the implementing partner – NEEDS. Simple random

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

Stage 2- 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 10 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 the activities done.

6.2.2. Qualitative Sample Size Calculation

Qualitative tools of In-depth Interviews (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, the recall method was used in the household survey to assess the change that has happened over time. For this purpose, the respondents were asked to recall the value of critical indicators at the start of the program.

6.3. HRDI Methodology

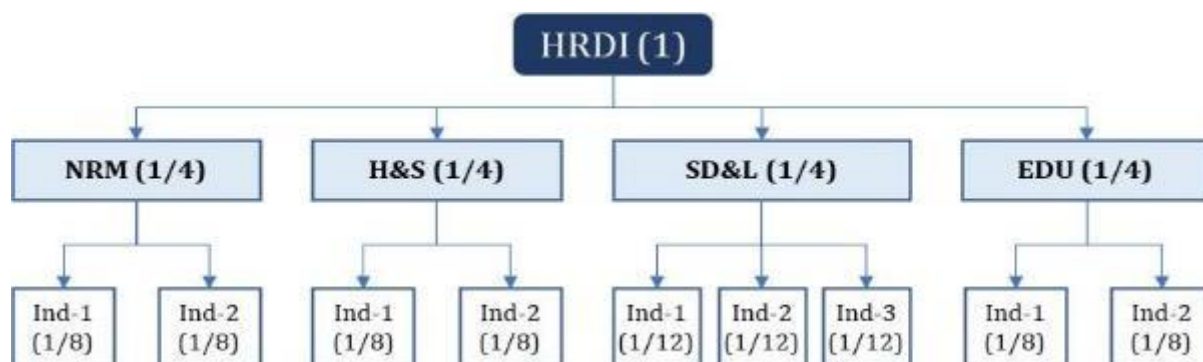
The outcome indicators included in the HRDI were obtained from different domains and are consequently measured on different scales. Therefore, to ensure the comparability of these indicators, all the indicators were converted into discrete variables such that the indicators could be measured between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

Indicator Weights

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

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

Domain and indicator weights¹⁸



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

Project X		
<i>Natural Resource Management</i>	The proportion of farmers with net income above the median	$(1/4) \times (1/3) = 0.083$
	Percentage of farmers reporting access to irrigation	$(1/4) \times (1/3) = 0.083$
	The proportion of farmers with the area under irrigation (Ha) above the median	$(1/4) \times (1/3) = 0.083$
<i>Health and Sanitation</i>	Percentage of households with access to an improved toilet facility	$(1/4) \times (1/2) = 0.125$
	Percentage of households with increased access to soak pits	$(1/4) \times (1/2) = 0.125$
	Percentage of SHG members who reported SHG being involved in enterprise/business activity	$(1/4) \times (1/4) = 0.0625$
<i>Livelihoods and Skill development</i>	Percentage of households with improved skills in Agriculture	$(1/4) \times (1/4) = 0.0625$
	The proportion of households with income from Livestock above the median	$(1/4) \times (1/4) = 0.0625$
	The proportion of SHG women with income from enterprise above the median	$(1/4) \times (1/4) = 0.0625$
	Percentage of students reporting increased access to functional learning infrastructure (library, learning aids, etc.)	$(1/4) \times (1/2) = 0.125$

¹⁸ NRM: Natural Resource Management | H&S: Health and Sanitation | SD&L: Skill Development and Livelihoods | EDU: Education

Education

Percentage of students reporting increased access to functional school physical infrastructure (drinking water posts, separate washrooms, etc.)	$(1/4) \times (1/2) = 0.125$
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Once all the indicators were standardized and weighted, a sum of these weighted indicators was utilized to calculate the value of HRDI.

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

Method to calculate HRDI

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

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

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

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

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

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

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

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

Domain	Indicators	Baseline	HRDI	End line	HRDI	% Change
NRM	The proportion of farmers with net income above the median	0.22	0.13	0.35	0.18	38%

NRM	Percentage of farmers reporting access to irrigation	0.19		0.23		
NRM	The proportion of farmers with the area under irrigation (Ha) above the median	0.12		0.15		
H&S	Percentage of households with access to an improved toilet facility	0.09	0.03	0.49	0.15	400%
H&S	Percentage of households with increased access to soak pits	0.03		0.12		
Skill	Percentage of SHG members who reported SHG being involved in enterprise/business activity	0.08	0.07	0.17	0.08	14%
Skill	Percentage of households with improved skills in Agriculture	0.05		0.06		
Skill	The proportion of households with income from Livestock above the median	0.09		0.07		
Skill	The proportion of SHG women with income from enterprise above the median	0.05		0.03		
ED	Percentage of students reporting increased access to functional learning infrastructure (library, science labs, learning aids, etc.)	0.36	0.16	0.36	0.20	25%
ED	Percentage of students reporting increased access to functional school physical infrastructure (drinking water posts, separate washrooms, etc.)	0.28		0.45		
Total		0.39		0.62		59%

6.4. Overview of Impact Calculation

Table 10: An overview of project impact in NRM¹⁹

Outputs	Output Indicators		Output Avg.	Impact level
Increased income from agriculture				
1. Land/ crop productivity	a) Proportion of farmers reporting an increase in production of crops that were supported under HRDP	69%	36%	Low
	b) Proportion of farmers reporting increased input efficiency after the intervention	4%		
	c) Proportion of farmers reporting increased income from crops that were supported under HRDP.	91%		
	d) Average increase in income from crops that were supported under HRDP (% change)	86%		
	e) Average increase in productivity from crops that were supported under HRDP(% change)	33%		
	f) Average decrease in input cost (% change)	-67%		
2. Access to the farm management infrastructure	a) Proportion of beneficiaries satisfied with the quality of available services (in farm management)	55%	36%	Low
	b) Proportion of farmers reporting project interventions in seeds, tools, organic farming, and irrigation leading to an increase in production	27%		
	c) Proportion of farmers reporting project interventions leading to increase in income (average of top 4-5 crops)	26%		
	d) Proportion of farmers currently practising usage of organic manure/vermi pits/Azolla units /GAP cropping	25%		
	e) The proportion of farmers reporting an increase in the use of natural fertilizers?	47%		
3. Increased adoption of crop diversification	a) Proportion of farmers diversifying their crops with project support.	58.0%	55.0%	Medium
	b) Proportion of farmers who report income increase due to crop diversification (base = farmers who adopted crop diversification)	52%		
4. Land under irrigation	a) Increased area under irrigation	92%	54%	Medium
	b). The proportion of farmers who received support for irrigation	15%		
Increased use of clean energy solutions				
1.Adoption of clean energy infrastructure	a) Proportion of HHs using clean energy infrastructure (Base=all)	14%	14%	Low
	b) Proportion of households reporting benefits from using clean energy infrastructure (Base=clean energy beneficiaries)	14%		

¹⁹ 100%-70% - High impact; 40%-70%- Medium impact, <40% - Low impact

Table 11: An overview of project impact on skill training and livelihood enhancement

Goal: More Income for the HHs through Diverse income sources locally to farmers, youth and women				
Improved access to agricultural training and services				
1. Access to Agriculture training and services	a) Proportion of farmers who reported project training services are useful	99%	62%	Medium
	b) Proportion of farmers who demonstrate awareness regarding sustainable farming practices	25%		
2. Adoption of improved farming practices	a) Proportion of farmers who adopt scientific agricultural practices	25%	58%	Medium
	b) Proportion of beneficiaries reporting an increase in productivity due to better farm management	67%		
	c) Proportion of farmers reporting increased income	83%		
Economic empowerment through collectivization (Only for SHG members)				
1. Formation/ revival of SHG based Enterprises	a) Proportion of members who received support with establishing/reviving SHG enterprises	67%	67%	Medium
	b) Proportion of members whose SHGs are currently functioning	67%		
2. Development of entrepreneurship	a) Proportion of SHG members who received training	40%	20%	Low
	b) Proportion of SHG members undertaking entrepreneurial activities	0%		
	c) Proportion of SHGs with increased savings	67%	50%	Medium
	d) Proportion of SHG members reporting improved income	33%		
Improved capacity to generate income through livestock management				
1. Adoption of scientific management of livestock	a) Proportion of beneficiaries who received support in livestock management services	75%	39%	Low
	b) Proportion of beneficiaries reporting an increase in income from livestock management	45%		
	c) Proportion of beneficiaries reporting improved livestock health	4%		
	d) Proportionate increase in average income from livestock	32%		

Table 12: An overview of project impact on health and sanitation

Goal: Healthy lives and good hygiene practices				
Improved health infrastructure and services				
1. Establishment/ enhancement of health infrastructure and services	a) Proportion of beneficiaries who gained access to health services	5%	66%	Medium
	b) Proportion of beneficiaries reporting lifestyle changes due to improved access	100%		
	c) Proportion of beneficiaries who consulted medical references from camps	93%		
2. Improved quality of health services	d) Increase in no. of beneficiaries reporting improved quality of available services	63%	63%	Medium
Improved sanitation infrastructure and services				

1. Establishment/ enhancement of sanitation infrastructure.	a) Proportion of beneficiaries who gained access to sanitation services	13%	64%	Medium
	b) Increase in no of HHs with access to sanitation infrastructure/ facilities	80%		
	c) Proportion of beneficiaries reporting benefits due to improved access	100%		
Development of Kitchen gardens				
1. Increased adoption of kitchen gardens	a) Proportion of HHs reporting income gains from kitchen gardens	58%	61%	Medium
	b) No of HHs received seeds and training in the kitchen garden	71%		
	c) No of HHs with improved vegetable/fruit consumption due to kitchen gardens	72%		
	d) Proportion of HHs reporting improved nutrition	84%		
	e) Increase in the area under the kitchen garden	18%		
Improved awareness and health-seeking behaviour				
1. Awareness regarding health and sanitation practices	a) Improved dietary practices/reduced tobacco consumption/improved physical exercise	94%	88%	High
	b) Improved awareness regarding cleanliness and sanitation practices	83%		

Table 13: An overview of project impact on Education

Goal: Active participation and effective learning of children in quality education centres				
Outputs	Output Indicators	Output Average		Impact
Improved capacity of educational institutions to provide services				
1. Access to improved physical infrastructure	a) Proportion of students/schools who report gaining access to functioning smart class rooms/ BaLa/science labs/libraries/learning aid/furniture/sports equipment	75%	58%	Medium
	b) Proportion of schools who gained access to clean and functioning sanitation units/drinking water posts at education institutions	100%		
	c) Proportion of schools reporting regular maintenance of smart class rooms/sanitation units/science labs/drinking water units/sports infra/others	0%		
2. Improvements in quality of teaching	a) Proportion of teachers regularly utilizing smart classrooms/libraries/smart class	5%	30%	Low
	b) Proportion of students who prefer/regularly use smart class rooms/science labs/ libraries for lessons	0%		
	c) Proportion of teachers reporting improved capacity to adopt innovative teaching methods (Base= teachers who received training)	87%		
	d) Awareness among teachers regarding child development (Base= teachers who received training)	27%		
Improved learning outcomes				
1. Improved exam performance and subject confidence among students	a) Proportion of students who report improvements in access to reference material	62%	81%	High
	b) Proportion of students reporting an increase in confidence in various subjects (lessons are easy to understand, more interesting etc.) (base= students who use a smart class on most days)	100%		
