

Impact Assessment Study Of Holistic Rural Development Programme (HRDP)

Assam



Prepared For:



HDFC Bank CSR

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Table of Contents

List of Tables.....	3
List of Images	3
List of Figures.....	4
Executive Summary.....	5
1. Introduction.....	8
1.1. Background of the Study.....	8
1.2. Partner Organization- World Vision India.....	8
1.3. Purpose and objectives of the study.....	8
2. Research Methodology.....	10
2.1. Design and Methodology.....	10
2.2. Sample Size and Distribution	11
3. Program Review	12
3.1. Program Design and Implementation	12
3.2. Program Relevance.....	13
4. Study Findings	15
4.1. Demographic profile	15
4.2. Natural Resource Management.....	16
4.2.1. Effectiveness and Impact.....	16
4.2.2. Case Study: Group Irrigation in Christian Basti	21
4.3. Skill Training and Livelihood Enhancement.....	22
4.3.1. Effectiveness and Impact.....	22
4.3.2. Case Study: A Delicate Weave.....	27
4.4. Health and Sanitation	28
4.4.1. Effectiveness and Impact.....	28
4.4.2. Case Study: Promoting Nutrition in Ayengia Patiri.....	29
4.5. Promotion of Education.....	30
4.5.1. Effectiveness and Impact.....	30
4.5.2. Case Study: WASHing their way to a healthier future.....	33
4.6. Sustainability	34
4.7. Holistic Rural Development Index (HRDI)	35

5. Conclusion.....	36
5.1. Summary of Findings.....	36
5.2. Recommendations	37
6. Annexures.....	38
6.1. Detailed Activity List.....	38
6.2. Sampling Methodology	39
6.2.1. Quantitative Sample Size Calculation.....	39
6.3. HRDI Methodology	39
6.4. Overview of Impact Calculation	42

List of Tables

Table 1: Summary of HRDI scores	6
Table 2 Summary of key income indicators	7
Table 3: Quantitative Sample Covered	11
Table 4: Qualitative sample size covered	11
Table 5: Activities under NRM in Assam.....	16
Table 6: Activities under skill training and livelihood enhancement in Assam	22
Table 7: Activities under health and sanitation in Assam	28
Table 8: Activities under education in Lakhimpur and Dhemaji, Assam.....	30
Table 9: Holistic Rural Development Index for North Lakhimpur and Dhemaji, Assam	35
Table 10 Overview of impact of interventions under NRM	42
Table 11 Overview of impact of interventions under ST&LE	44
Table 12 Overview of impact of interventions under Health & Sanitation	45
Table 13 Overview of impact of interventions under Education.....	45

List of Images

Image 1: Training of field team held at Lakhimpur, Assam	12
Image 2: Drinking water infrastructure built under HRDP in Christian Basti, Assam	13
Image 3: Sanitation infrastructure built under HRDP in Christian Basti, Lakhimpur	13
Image 4: Discussion with beneficiaries of skill development training under HRDP	14
Image 5: Solar street light under HRDP in Lakhimpur, Assam.....	14
Image 6 WASH murals in School in Kulajan, Assam.....	14
Image 7 Overview of Impact effectiveness of NRM interventions under HRDP	16
Image 8 Overview of Impact of Skill and Livelihood Enhancement Interventions	22
Image 9 Overview of impact of interventions under Health and Sanitation	28
Image 10 Overview of project effectiveness and impact on Education	30

List of Figures

Figure 1: Overview of project impact.....	7
Figure 2: Conceptual framework of the implementation.....	9
Figure 3: Areas covered under the study.....	9
Figure 4: Project Planning and implementation process.....	12
Figure 5 Economic profile of the respondents (N=365)	Error! Bookmark not defined.
Figure 6 Educational profile of the respondents (N=365)	Error! Bookmark not defined.
Figure 8 Source of income of the respondents (N=365)	15
Figure 7 Category distribution of the respondents (N=365)	
Figure 9: Increase in average annual agricultural income of a household <i>in Rs. (Based on median)</i> (N=43).....	17
Figure 10: HRDP interventions and other factors that contributed to increase in production of paddy (N=43).....	17
Figure 11: Benefits of natural fertilizer learnt under HRDP intervention (N=23).....	18
Figure 12: Usage hours of Solar House Lantern (N=210).....	19
Figure 13: Perceived benefits solar lights (N=210)	19
Figure 14: HRDP support areas in disaster risk reduction (N=169).....	19
Figure 15: Perceived benefits of disaster management interventions (N=169).....	20
Figure 16: Agriculture practices learned through HDFC bank training and currently practicing (N=21)	23
Figure 17: Perceived improvements due to the training and adoption of agricultural practices (N=21)	23
Figure 18 Support received through HDFC bank interventions (N=97)	24
Figure 19 Perceived change in income through SHG enterprises (N=97).....	24
Figure 20: Reason for no change in income from SHG Enterprises (N=97).....	24
Figure 21 Benefits of the skill training (N=27)	25
Figure 22: Perceived benefits of enterprise development support (N=21).....	25
Figure 23: Change in average monthly income due to enterprise development (N=21)	26
Figure 24: Perceived benefits of HRDP-supported kitchen gardens (N=97).....	28
Figure 25: Infrastructural services available/ functional before and after project inception (N=35)	31
Figure 26 Improvement in Learning Levels of Students under Remedial Education intervention (N=12).....	32

Executive Summary

As part of the HDFC bank's CSR initiative, programs are supported to deliver holistic rural development. Within Parivartan, the "Holistic Rural Development Program" (HRDP) is the flagship CSR program, under which non-governmental organizations across the country are supported to deliver development interventions. In Lakhimpur and Dhemaji, World Vision India was the implementation partner of the assessed HRD program (10 villages). The major focus areas for intervention were Natural Resource Management (NRM), Skill Development & Livelihood Enhancement (SDLE), Healthcare & Hygiene, and Promotion of Education. The impact assessment aims to critically and objectively evaluate the implementation and performance of the activities using the adaptive framework 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. A sample size of 453 was covered for the quantitative data collection while In-depth interviews and focused group discussions were conducted to qualitatively deepen the understanding of the interventions.

Natural Resource Management: Natural Resource Management is the main pillar under HRDP and the project has achieved notable improvements in farmers' income, adoption of sustainable practices, and reducing vulnerability during disasters such as floods. Provision of water pumps for improving the access to irrigation was highly appreciated by the farmers. Since the interventions in farming were fairly recent, **farmers reported only a 12% increase from Rs. 17000 (baseline) to Rs. 19000 (endline) in annual net income from farming. Meanwhile, 60% of farmers reported increased consumption of natural fertilizers.** As a flood-affected region, the project has also contributed to vulnerability reduction of the community by supporting the development of disaster management infrastructure namely elevated handpumps, drinking water, and sanitation units. Dry food ration was also provided to the marginal households which the beneficiaries found to be very helpful. An increase in lighting in public spaces through solar street lights has been a highly appreciated intervention among the community. Furthermore, **90% solar lamp beneficiaries reported utilizing the same for studying purposes indicating usage among children for education.**

Skill Training and Livelihood Enhancement: Skill and livelihood-based interventions largely focused on enhancing the capacity of farmers to adopt innovative and sustainable agricultural practices, employability and self-employment skills of youth, and entrepreneurship development among SHG members. Livestock management training was provided to the SHG women beneficiaries of pig and poultry. In the case of agricultural services and associated training, **90% have continued to adopt at least one practice they learned through the training.** For skill development training, in qualitative discussions, youth beneficiaries reported starting business or self-employment activities post-training though no major impact was noticed in the case of accessing job opportunities. Similarly, for SHG women, the project served as a platform to not just gain entrepreneurial skills but also an enabling environment to undertake business activities. **More than 70% of SHG beneficiaries believe that being an SHG member has helped them in improving**

income generation capacity, personal savings, and confidence building indicating the crucial role these institutions play in facilitating women empowerment. However, field interactions indicated that, in the case of SHG enterprises, most women chose to continue individual business rather than a collective activity in recent years. In the case of livestock owners, about a **67% increase in average annual income from livestock management has been seen**, largely owing to the promotion of poultry and pig rearing activities.

Health and Sanitation: For improving their dietary habits, kitchen gardens have been promoted by the HRDP, through the distribution of seeds, fertilizers/pesticides, and training. **The households saved ₹300 per week on average in buying fruits and vegetables and earned ₹390 per week from the sale of vegetables in the local markets.** The intervention was low in impact due to low increase in proportion of households adopting kitchen garden.

Promotion of Education: With regard to educational interventions, the project largely focused on improving the learning environment of school students by improving infrastructural facilities with a special focus on WASH-related interventions. The interventions under Promotion of Education were highly successful in improving the WASH practices of the children and increasing the access to potable water. **More than 90% of the students and teachers reported an increase in awareness of WASH practices through the awareness sessions and murals.** The remedial education classes were impactful in improving the learning outcomes of the children. **More than 75% of the students and parents reported that the remedial education classes have led to improvements in the learning capacity and grades of children.**

Holistic Rural Development Index (HRDI): HRDI is a composite indicator comprising 10 key outcome indicators spread across the four domains of focus under the HRDP. For assessing the effectiveness of the interventions, the study has used the Holistic Rural Development Index (HRDI). The composite HRDI score indicated a **medium impact at 0.63¹** for the districts.

Table 1: Summary of HRDI scores

HRDI Score	Baseline	Endline	% Change
	0.44	0.63	43%

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.** Establishment of village level committees for promoting the sustainable agricultural practices among farmers through further trainings or meetings would create a long-term impact. In the case of health, enhancing the project scope to include health-related interventions would add to the impact created by the project in the

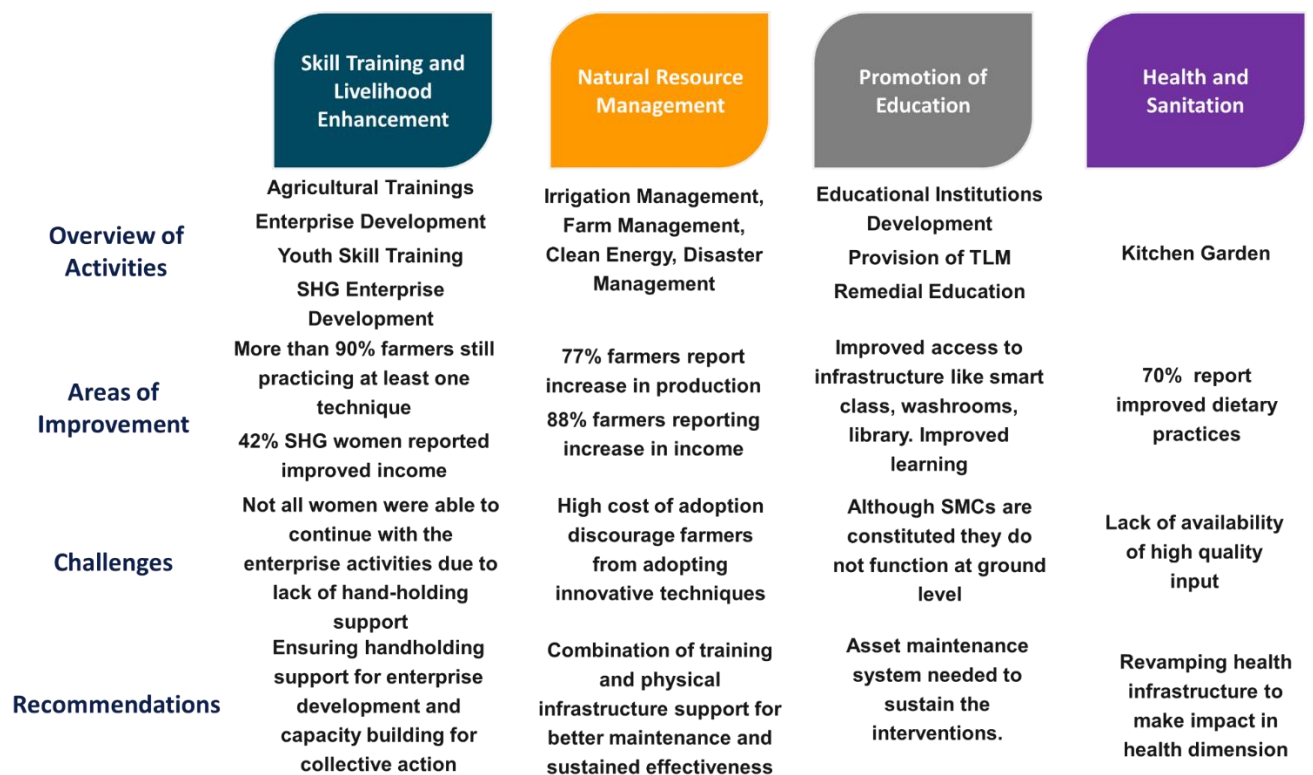
¹ Overall HRDI scores for different clusters will range from 0 to 1, with
 - 0 being Low/Poor and 1 being High/Best
 - For instance: 0 to 0.33: Poor/Low; 0.34 to 0.66: Moderate/Medium; 0.67 to 1: High/Best (Good)

thematic area. With regard to education interventions, although handwash stations, washrooms, and libraries are functional, ensuring proper maintenance would be required to sustain them for a long time. In the case of smart classrooms, follow-up service is needed to ensure proper installation and usage for the intervention to be successful.

Table 2 Summary of key income indicators

Income Indicators (based on median)	Before	After	% Change
Average Net Income from Agriculture (INR)	17,000	19,000	12%
Average Annual Income from Skill (income from enterprises) (INR)	12,900	27,000	109%
Average Annual Income from SHG (INR)	9,900	12,600	27%
Average Annual Income from Livestock (INR)	14,400	24,000	67%
Average Productivity of 3 major crop (Qtl./Acre)	9	11	22%

Figure 1: Overview of project impact



1. Introduction

1.1. Background of the Study

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

In Assam, the HRDP project was focused on four thematic areas: Natural Resource Management, Skill Training and Livelihoods Development, Health and Hygiene, and Promotion in Education. The interventions that World Vision India has undertaken in Assam are focused on disaster management, building resilience, access to irrigation facilities; ensuring access to basic sanitation, hygiene, education, drinking water, electrification facilities through infrastructure support, enhancing nutritional security, livelihood enhancement, empowerment of women, and mobilization of household savings for productive use. The mode of delivery has been through the creation of village-level institutions or user groups to ensure sustainability and ownership by the community.

1.2. Partner Organization- World Vision India

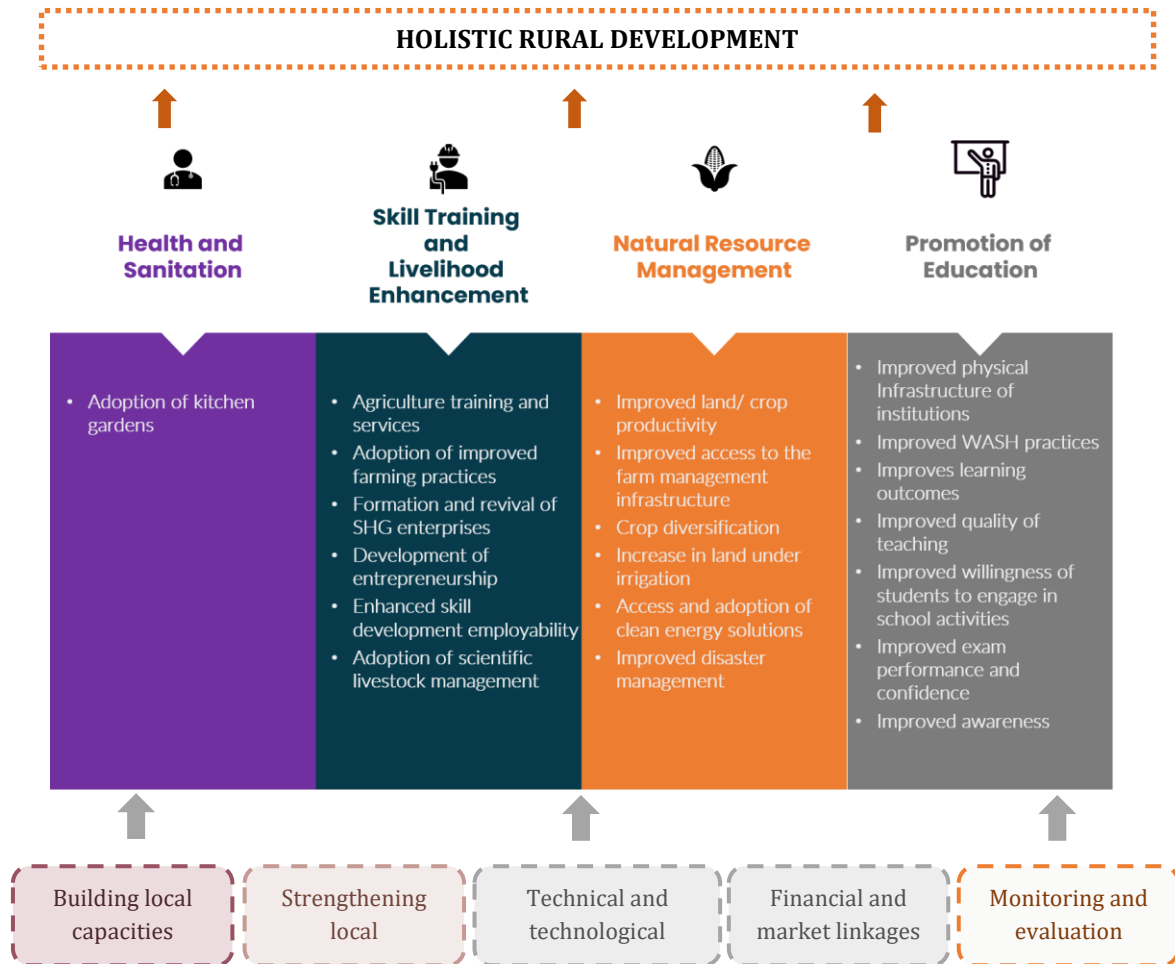
World Vision India is one of the country's largest child-focused humanitarian organizations. They employ proven, effective development, public engagement and relief practices empowering vulnerable children and communities living in contexts of poverty and injustice to become self-sufficient and bring lasting change. In alignment with their forte, World Vision India has greatly focused on the theme of education by taking up interventions like remedial classes and WASH in schools along with other major thematic interventions like disaster management, promotion of health, and skill development.

1.3. Purpose and objectives of the study

The impact assessment aims at understanding the overall process undertaken by HDFC bank and partner organizations in implementing the program activities, key milestones achieved, impact created by these activities, challenges faced, and the manner in which such challenges were handled. The guiding philosophy behind this study is to add value by showcasing successful initiatives and recommending possible ways to address challenges that exist. The impact assessment aims to 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 programs. The evaluation was also an opportunity to learn about the relevance of the programs

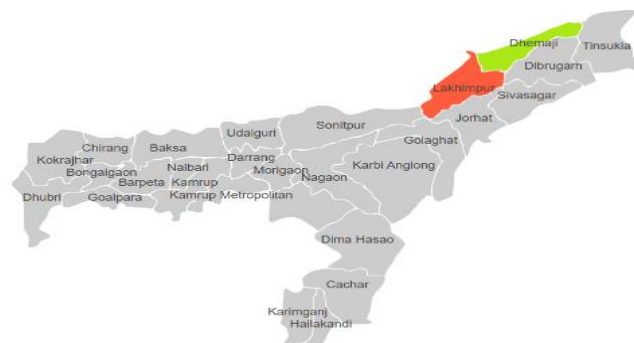
implemented and the effectiveness of such programs. The conceptual framework employed and the area covered under the study are depicted below.

Figure 2: Conceptual framework of the implementation



The proposed project area is comprised of 7 villages in Dhemaji district and 3 villages in North Lakhimpur district which are the most backward district of Assam and also stand below average in the Poverty Index and HDI.

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 the World Vision India 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 program has worked on strengthening the community's capacity to ensure sustainability, and whether any of the activities or strategies adopted have been/could be replicated.

2.1. Design and Methodology

A review of various program documents including HDFC 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 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	Total Households	NRM	Skill Training and Livelihood Enhancement	Health and Sanitation	Promotion of Education
N. Lakhimpur	124	71	33	34	32
Dhemaji	324	220	101	71	95
Total	448	291	134	105	127
Planned	400	120	100	80	100

The total sample calculated for the study was 400 but the sample collected on ground was 448 to keep margin for error. 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 World Vision India through 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

District	FGDs					IDIs		
	SHG	Student	Community	Headmaster	Remedial Education Volunteer	Farmers	Anganwadi Worker (AWW)	Micro enterprise
North Lakhimpur	2	1	1	1	1	2	1	1
Dhemaji	2	1	1	1	1	2	1	1
Total	4	2	2	2	2	4	2	2
Planned	4	2	2	2	2	4	2	2

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.

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Image 1: Training of field team held at Lakhimpur, Assam



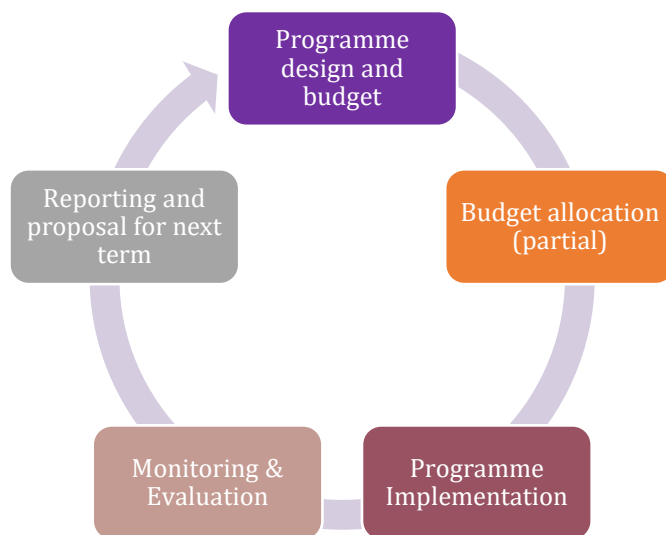
Teams of local enumerators, with requisite education and experience, were hired for data collection. One day of training at Lakhimpur, Assam was provided to the enumerators and supervisors by the NRMC team.

3. Program Review

3.1. Program Design and Implementation

The programme’s interventions were decided on an annual basis, with an annual budget allocation based on the proposal by World Vision India to HDFC Bank. A preliminary assessment for each programme village was conducted in the districts which were also accessed during the study.

Figure 4: Project Planning and implementation process



Based on these preliminary assessments, the partner organization prepared an annual work plan wherein activities were proposed on a need basis. 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, elevated toilets and handpumps, and handloom units. Painting and renovation work at schools and Anganwadi centres and the e-learning initiative in schools were also the areas where the budget was allocated. While the capacity building of farmers and provisioning of vegetable seeds and other inputs were there. In Assam, a relatively larger focus was on training and skill-building while behavioral interventions were limited.

3.2. Program Relevance

Image 2: Drinking water infrastructure built under HRDP in Christian Basti, Assam



Image 3: Sanitation infrastructure built under HRDP in Christian Basti, Lakhimpur



Challenges in the region

Assam is a multi-hazard state prone to floods, earthquakes, storms, and landslides besides manmade disasters. Also, the state faces acute flood and erosion problems. Assam has a history of disasters ranging from large earthquakes to severe floods. All the rivers in Assam are liable to floods, mainly because they receive heavy rainfall within a short time. On the other hand, during the winter sowing season, irrigation becomes an issue due to the lack of supporting infrastructure. This in turn necessitates interventions in irrigation, especially sustainable irrigation methods such as water pumps.

Although the unemployment rate in Assam is much low at 11.1% than the national unemployment rate (23.5%)³ but there are limited opportunities for rural women to participate in income-generating activities

Assam ranks fifth among all the states in the country with an average literacy rate of 86%⁴. However, this does not translate to a good quality education system, especially in the project villages. The state of educational institutions in the project villages is distressing, even with the high literacy rate. Even though there have been several initiatives by the state and Central governments to increase the enrolment rate, during floods, it becomes very difficult for the children and youth to access their schools and colleges respectively⁵. Often, because of their poor economic conditions, they are forced to drop out.⁶

Relevance of the Interventions

In this context, interventions in the areas of farm management, irrigation, pesticide, and soil health management are pertinent in improving the farm income generation capacity of the community. In addition to responding to the needs of the farming community, the project has also attempted to influence the skill gaps and unemployment among the youth through skill development and

³ <https://www.livemint.com/news/india/unemployment-in-assam-hits-19-month-high-of-11-1-in-apr-2020-cmie-survey-11588316041563.html>

⁴ <https://www.census2011.co.in/census/state/assam.html>

⁵ Mili N., Acharjee S., and Konwar M. Impact of flood and river bank erosion on socio-economy: a case study of Golaghat revenue circle of Golaghat district, Assam, International Journal of Geology, Earth & Environmental Sciences ISSN: 2277-2081 (Online). <https://www.academia.edu/download/33148451/JGEE-20-030-ACHARJEE-IMPACT-ASSAM.pdf>

⁶ RRA Report- HDFC-IGSSS, Lakhimpur, Assam

enterprise support. Furthermore, the project has also aimed at improving income generation from livestock management through training in scientific livestock management and providing access to livestock health services.

Image 4: Discussion with beneficiaries of skill development training under HRDP



Handpumps are most commonly used by households in study areas for household chores and also for drinking purposes. During floods, however, handpumps are submerged with water leading to a drinking water shortage in the region. The project interventions in disaster management, namely elevated toilets, elevated handpumps, relief and training on disaster preparedness mainly hygiene practices, have hence been appropriate and essential for the disaster-stricken community.

Capacity building and enterprise support for SHG women under the project has also been a pertinent intervention area considering the limited access to economic opportunities for women in the region.

While the majority of villages have access to electricity, there are no or limited street lights making it difficult for villagers to move around at night. There is a need for sustainable lighting systems.

To promote better dietary practices among the community, kitchen gardens were promoted in the intervention villages by providing seeds, fertilizer and training to the beneficiaries.

The school buildings have poor-quality walls and roofs, or it lacks infrastructure like toilets, lights, and teaching aids.

Image 5: Solar Street light under HRDP in Lakhimpur, Assam



Image 6 WASH murals in School in Kulajan, Assam



Through the HRDP, 8 school buildings have been renovated, provided with water and sanitation infrastructure, and smart classes were introduced for improving the learning methods. To secure a healthy school environment, protect children from illness and contribute to their learning abilities, a comprehensive WASH program was introduced in the schools. World Vision also introduced the REC model in the intervention schools to improve the learning levels of the students. Accordingly, an assessment of the children's improvement in learning outcomes was conducted at the beginning and end of the intervention.

4. Study Findings

This section gives the detailed analysis of the findings of the study. The section presents a brief demographic profile of the surveyed households along with the description of impact effectiveness of the activities conducted under the four major thematic areas. 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 respondents⁷ covered in the sampled program villages under the assessment. The sample was representative of both male (45%) and female (55%) and comprised of the marginalized sections of the society (Ref. fig. 6) living mainly in kutchha (92%) and semi-pucca houses (8%). The region being a tribal area, 80% of the respondents belonged to ST category. (Ref. Fig 5)

Figure 6: Category distribution of the respondents (N=365)

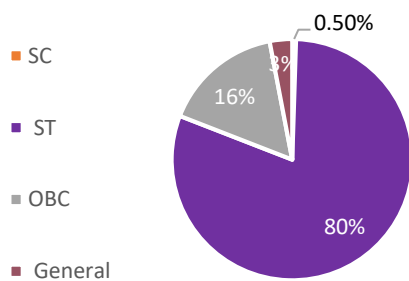
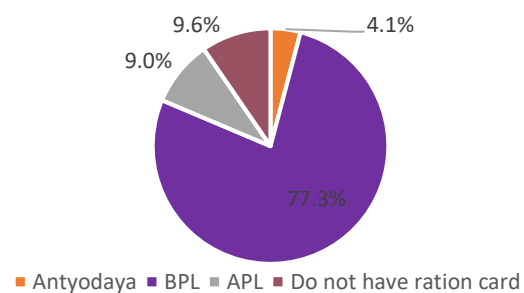


Figure 5: Economic profile of the respondents (N=365)



While 15% of the respondents were illiterate, more than 50% of them had attended certain number of years of school (ref. fig. 7). Moreover, since agriculture is the primary occupation of the people of rural Assam, 84% of the respondent's reported cultivation as their primary source of livelihood (ref. fig. 8). **Figure 8 Educational profile of the respondents (N=365)**

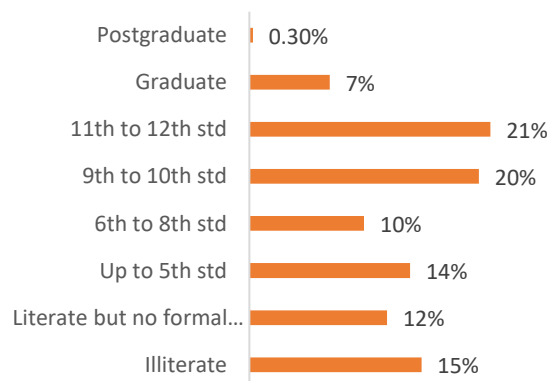
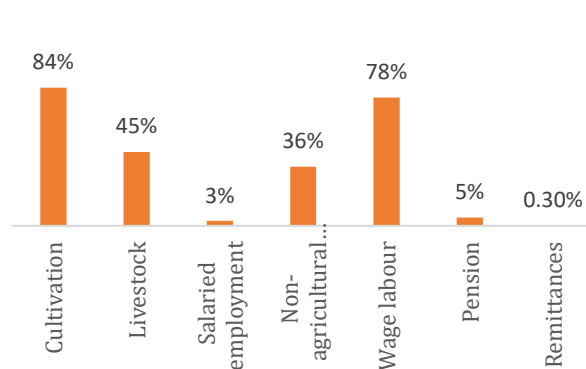


Figure 7 Source of income of the respondents (N=365)



⁷ The respondents are the beneficiaries of various activities under the interventions that were covered under the Household survey (sample size= 365)

4.2. Natural Resource Management

Under Natural Resource Management, four major activities were covered in the district. These activities include Irrigation Management, Farm Management, Clean Energy and Disaster Management. Considering the dependency on rainfall for irrigation, diesel-based irrigation pumps were provided in the intervention villages along with agricultural tools to support paddy cultivation. Clean energy solutions for improved lighting at the community and household levels were also distributed. Since both the districts are flood-prone therefore the majority of activities were focused on disaster preparedness, resilience building and relief.

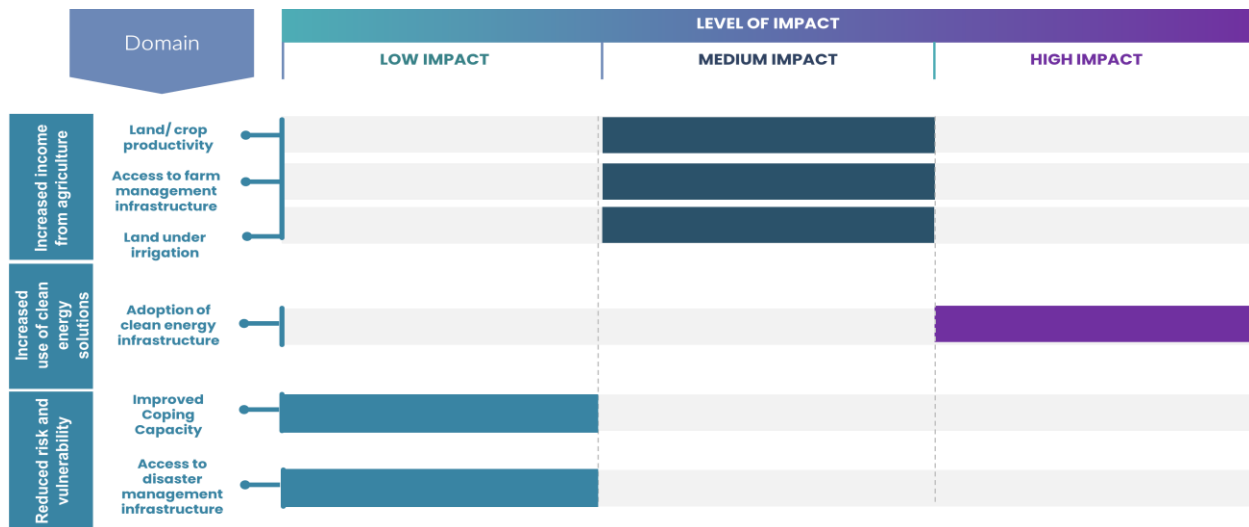
Table 5: Activities under NRM in Assam

Activity Category	Activities
Irrigation Management	Diesel Irrigation Pumps
Clean Energy	Solar Streetlight and Solar Lanterns
Disaster Management	Elevated toilets, handpumps, relief, disaster preparedness, disaster management training
Farm Management	SRI cultivation, inter-cropping, organic fertilizers

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.

Image 7 Overview of Impact effectiveness of NRM interventions under HRDP

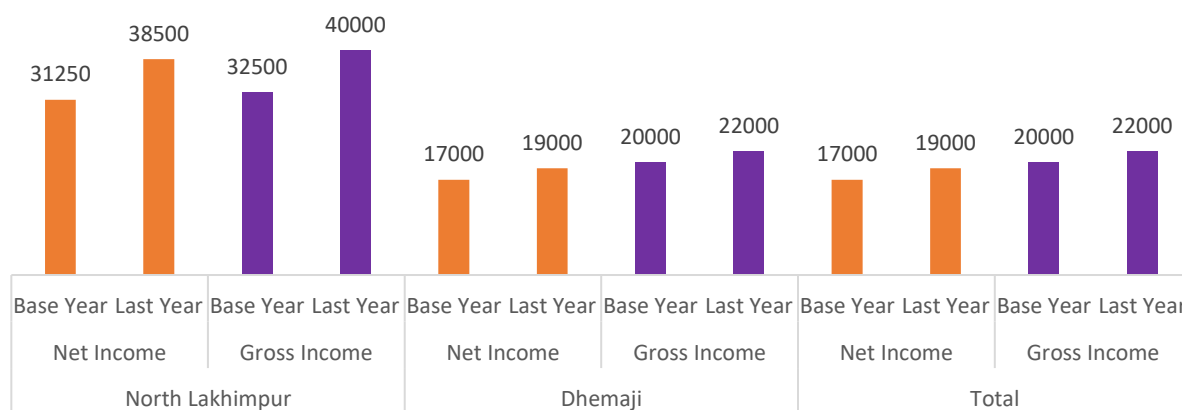


As indicated in the table above (See Image 7), the impact level attained under each category is calculated based on the average of output indicators under each activity category. Overall, the interventions under farm and water management had a medium impact while the clean energy interventions, solar street lights and solar lamps, created a high impact. Although the interventions related to disaster management had the highest outreach with almost half (48%) of the respondents being a beneficiary of the intervention, the impact was low because the major interventions, elevated handpumps and toilets, had low accessibility among the beneficiaries. The trainings on disaster

preparedness were also limited to the women SHG members who were not able to adapt and spread it among the community.

Income from agriculture: Only a small proportion of farmers (12%) were beneficiaries of the interventions related to farm management and water management during. The farmer-beneficiaries of the project have reported a **moderate increase in production, productivity, and income generated from agriculture in response to project interventions in farm management.** The adoption of innovative and sustainable activities such as organic manure, SRI, inter-cropping, and tool bank has directly contributed to input efficiency, productivity, and improvements in soil health according to the farming community. However, the project had limited scope in facilitating crop diversification. Since the interventions related to agriculture were implemented in late 2020 or early-2021 in all of the villages, the farmers were not able to report the benefits of the interventions accurately. As per the reported data, **the net income from farming in the last season before and after intervention, combined for the two districts, increased by 12% from Rs. 17000 (baseline) to Rs. 19000 (endline) (Ref. Fig 9),** a small yet statistically significant increase at a 95% confidence interval.

Figure 9: Increase in average annual agricultural income of a household in Rs. (Based on median) (N= 43)



Interventions in group irrigation have been the major contributors (64% positive response^{N=43} Ref Fig. 10) to the increase in the production of the main crop, paddy, cultivated in the district. None of the beneficiaries reported a decrease in productivity. Around 39% beneficiary farmers also reported favourable weather conditions as a factor in increasing the productivity.

Figure 10: HRDP interventions and other factors that contributed to increase in production of paddy (N=43)⁸

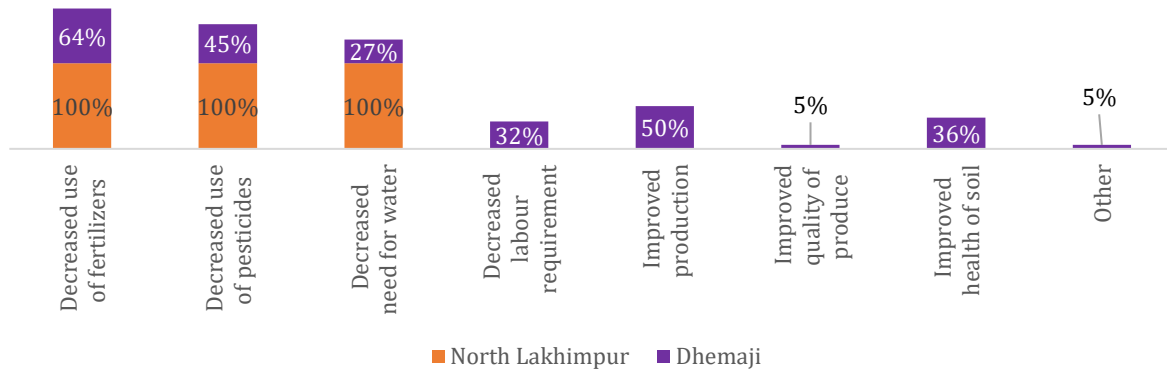
Crops	
Intervention	Rice
Seeds and tools	27%

⁸ Since there was no baseline data therefore this indicator has been assessed based on the perception of the farmers.

Irrigation	64%
Organic farming	18%
Soil testing and land treatment	6%
Farming techniques (e.g. SRI, creeper farming)	30%
Other interventions (training)	6%

More than 50% (Ref Fig 11) of beneficiary farmers perceived benefits in terms of a decrease in usage of fertilizer and pesticides and improvement in production and show satisfaction with these interventions however around 75% of beneficiaries felt that the adoption is expensive hence continuing with the practice in the long term is unsustainable for the farmers. The agricultural tools, although much appreciated, were less in use among the farmers due to the farmers' habit of following traditional methods like ploughing for tilling.

Figure 11: Benefits of natural fertilizer learnt under HRDP intervention (N=23)



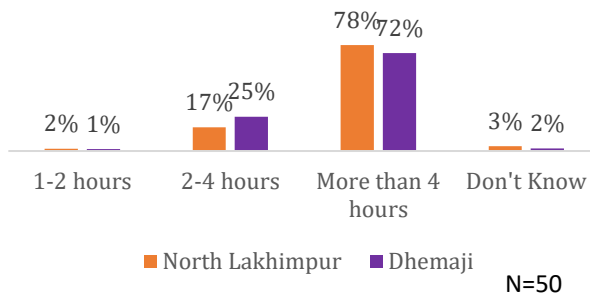
N=23 9

Overall, the interventions in agriculture have made a medium impact in terms of the effectiveness of the interventions among the beneficiaries which shows the success of the interventions. The impact of the intervention could be further amplified by increasing its outreach and by timely implementation of the interventions.

Use of clean energy solutions: While about 57% of beneficiaries reported accessing clean energy solutions, solar street lights instalment and solar house lanterns were the major activity undertaken. Among clean energy beneficiaries, 24% benefitted from solar home light distribution. About half the respondents have reported having access to around 10-15 hours of electricity. Around 96% of solar light beneficiaries use it for lighting purposes while more than 70% utilize it for general reading. Furthermore, **90% also reported utilizing the same for studying purposes indicating usage among various age groups.** While better lighting is the most reported, sustainability and cost-effectiveness were also reported by solar light beneficiaries as the major benefits as indicated in the figure.

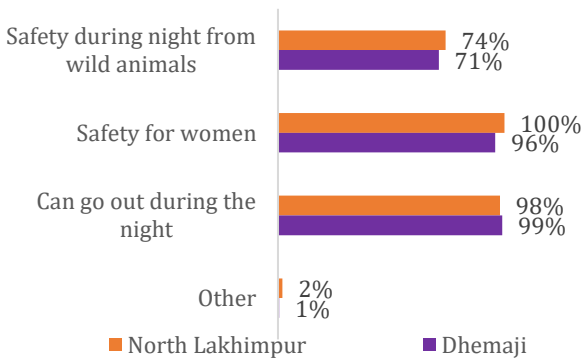
⁹ In North Lakhimpur, there was only one response for the section due to which the score shows 100% value.

Figure 12: Usage hours of Solar House Lantern (N=50)



With regard to solar street lights, **more than 90% of solar street light beneficiaries (181 respondents) reported that the solar lights are currently operational** indicating the sustained effectiveness of the intervention. Almost all beneficiaries of solar street lights reported improved safety due to the installation of solar street lights (Ref Fig 13).

Figure 13: Perceived benefits solar lights (N=181)

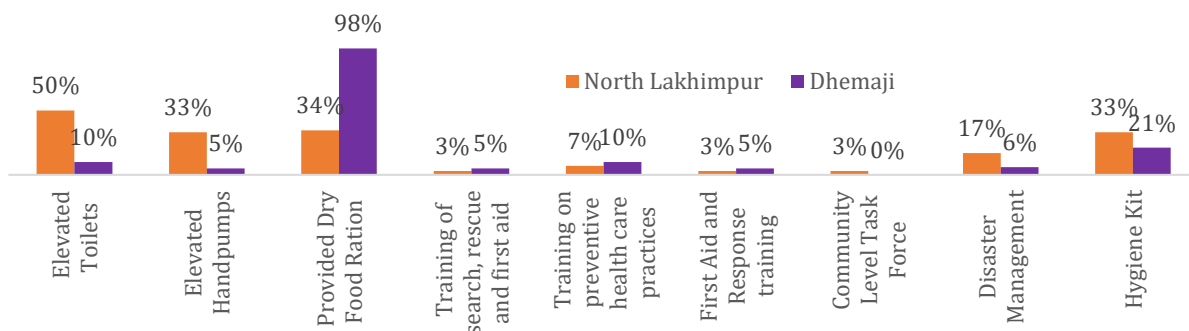


In the case of solar lights for households, **78% (n=50) of solar light beneficiaries were 'fully satisfied'** with the solar lights received through the HRDP project though the high maintenance cost was a major issue reported by the users as they were not able to use it once the solar lanterns became non-functional.

Reduced Risk and Vulnerability due to natural disasters: About 48% of survey respondents reported receiving disaster management support through the project.

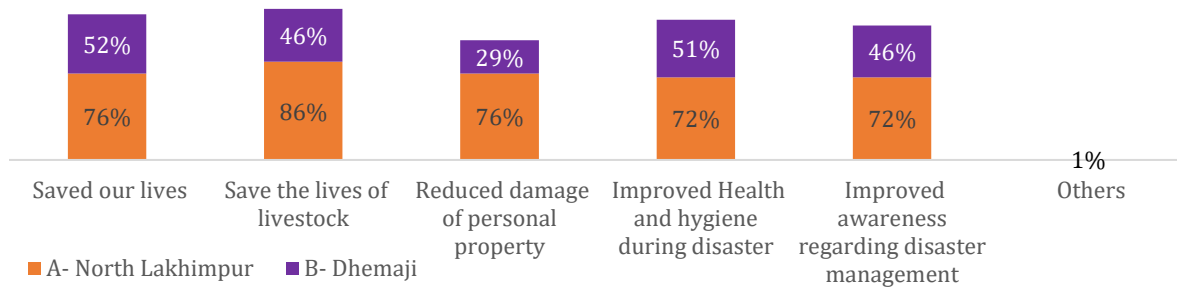
Among them, the provision of dry food rations (83%) and elevated toilets (17%) were the key interventions reported(Ref Fig 14). **Qualitative discussions indicated that the community members were in dire need of support and the project interventions were timely and effective in reducing the community's vulnerability due to natural disasters, namely floods.** But the impact of the infrastructure construction activities was low because only one handpump and sanitation unit were constructed in each village which was situated mostly at one corner of the village. The houses situated far away from these units did not utilize it thus reducing the impact of the intervention.

Figure 14: HRDP support areas in disaster risk reduction (N=169)



Improved safety of livestock and human lives were the major results of disaster management interventions according to the project respondents (Ref Fig 15). Furthermore, improvements in risk reduction with regard to property, health, and hygiene were also reported along with improved awareness.

Figure 15: Perceived benefits of disaster management interventions (N=169)



However, maintenance of structures built under the project is still a concern especially considering the lack of initiative among community members to undertake the same. For example, the elevated handpump in Christian Basti, Lakhimpur has already become non-functional due to some issues.

Varied activities were pursued under the NRM dimension with low to high outreach. The impact of the interventions across the activities varied from high(clean energy) to low(disaster management). **The provisioning of water pumps and clean energy solutions was highly appreciated by the community.**

4.2.2. Case Study: Group Irrigation in Christian Basti



Crisis in the flood-prone region: Although North Lakhimpur district is a flood-affected region, quite ironically, the farmers face a crisis in irrigating their farmlands when the rains are delayed. Phillip Horen is one such farmer who would struggle with irrigating his land during the paddy sowing season whenever the rainfall was delayed. When last year, the World Vision team approached the village, then the farmers brought up this major issue that they were facing. As per the needs assessment, the team formed a group of farmers in the village of Christian Basti and gave them a diesel pump for irrigation. Mr. Philip is also a member of the same group. With the availability of the irrigation pump, he was able to irrigate his lands on time this year to sow the paddy crop without having to wait for the rainfall. It was affordable for him to use the diesel pump as he had to spend around ₹100/hour instead of the rental rate of ₹200-250/hour.

The irrigation group formed in the villages has handed over the diesel pump for its operation and maintenance. They allow members outside the group to use the pump at a nominal charge. This charge is saved for maintenance of the pump if and when it stops functioning.

“Earlier we would wait for the rains to sow the paddy crop, but this year the water pumps were very helpful to us and we were able to sow the paddy on time.”- Phillip Horen

4.3. Skill Training and Livelihood Enhancement

To help increase the income of the household from non-agriculture sources, it becomes important to have pertinent skills. Under the HRD program, several skill development training and support to start their enterprise were conducted, for women, youth, and farmers. This not only includes trade-based skill training but also training on soft skills like communication and digital and financial literacy. The beneficiaries were also supported in market linkages and setting up of the necessary machinery.

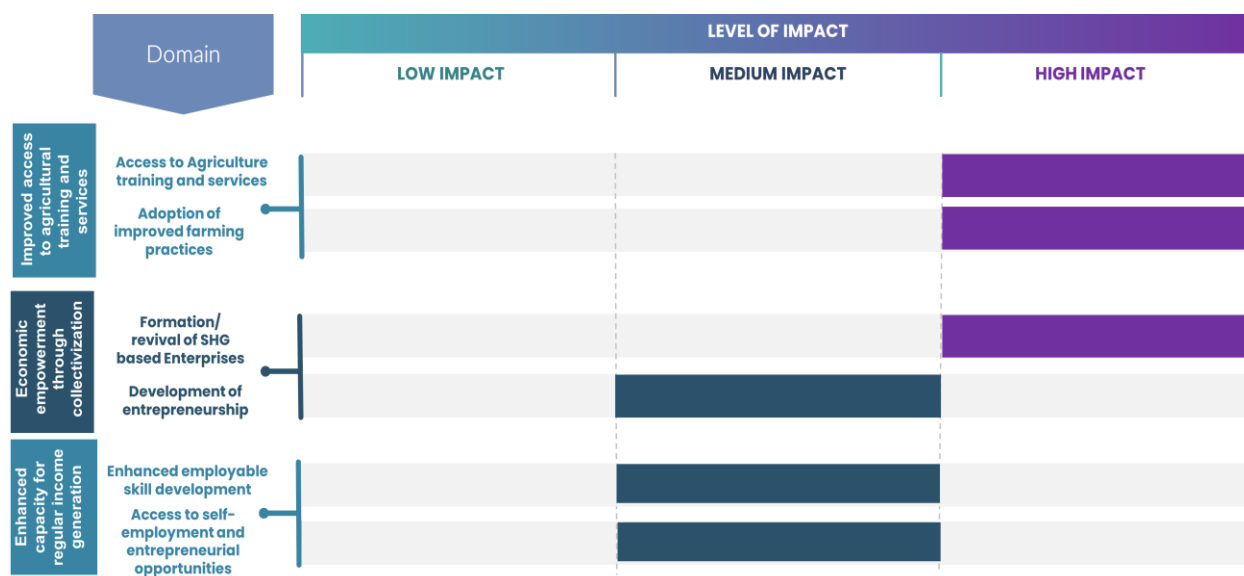
Table 6: Activities under skill training and livelihood enhancement in Assam

Activity Category	Activities
Agriculture Training and Support	Intercropping models, demonstration of cultivating paddy through SRI method, Farmer Training
SHG-Based Women Empowerment	Training on SHG activities, and training in trade-based enterprises (Weaving)
Skill Training	Relevant skills for youth and women to start their enterprise, including financial literacy and communication skills
Entrepreneurship Development	Grocery shops, barber shops, etc

4.3.1. Effectiveness and Impact

Under Skill training and livelihood enhancement, the project was highly successful in facilitating the development of enterprises and providing entrepreneurial training services. The effectiveness of the capacity-building activities was seen heightened when accompanied by physical capital support.

Image 8 Overview of Impact of Skill and Livelihood Enhancement Interventions¹⁰

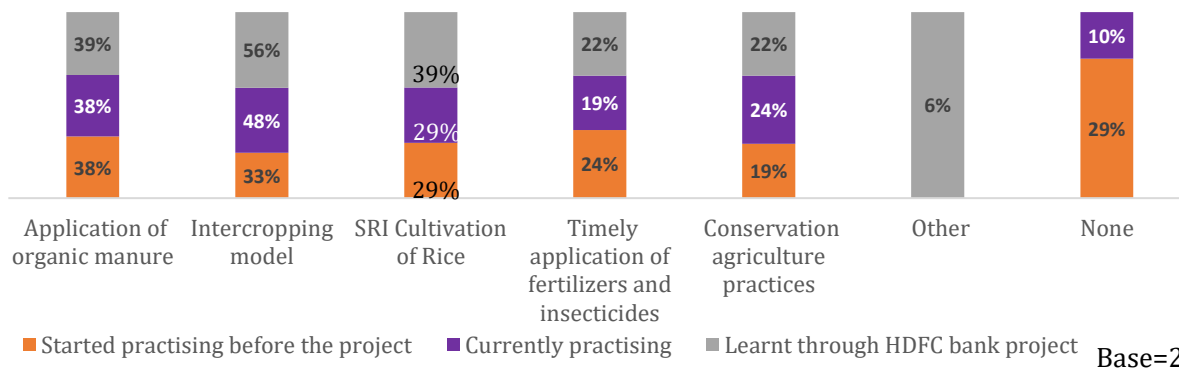


¹⁰ Impact effectiveness range: Low:- <40%, Medium:- 40%-70%, High:- >70%

The activities under SD&LE were focused on increasing the capacity of women and individuals to pursue livelihoods other than agriculture to support their household income. The intervention has enhanced the capacity of women to improve income generation capacity and entrepreneurship at the individual or collective level as indicated in the section ahead. Furthermore, **the livestock owners, have reported a 67% increase from Rs. 14,400 to Rs. 24,000 (based on median) in their annual income since the project inception** due to the interventions like distribution of poultry and pigs. The piggery intervention was also supported with shelter construction. A small number of beneficiaries were also supported with fishery activity through renovation of pond and distribution of fish seeds and feed.

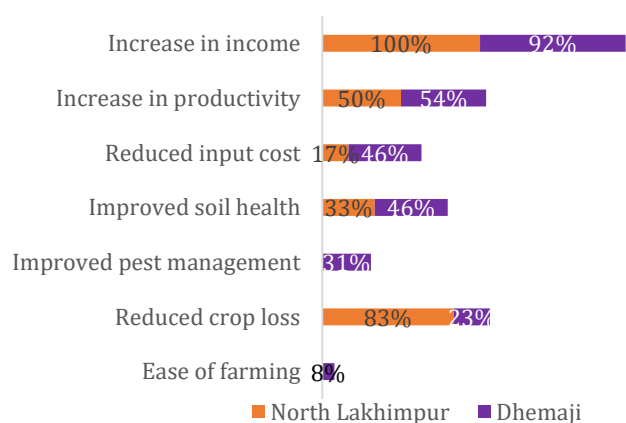
Agriculture training and services: Application of organic manure, timely application of inputs such as fertilizers and insecticides, and the package of practices are the major areas of training the community accessed through the project. (Ref Fig.16)

Figure 16: Agriculture practices learned through HDFC bank training and currently practicing (N=21)



The intervention was limited to a small number of beneficiaries (6%). More than 90% reported continued adoption of at least one practice they learned through the project indicating high effectiveness, especially the practices like the intercropping model (Ref. Fig. 16).

While practices such as organic manure, timely application of inputs such as fertilizers, and intercropping were adopted by community members even before project inception, **the training under HRDP has strengthened their knowledge** and helped them in improving the practices while



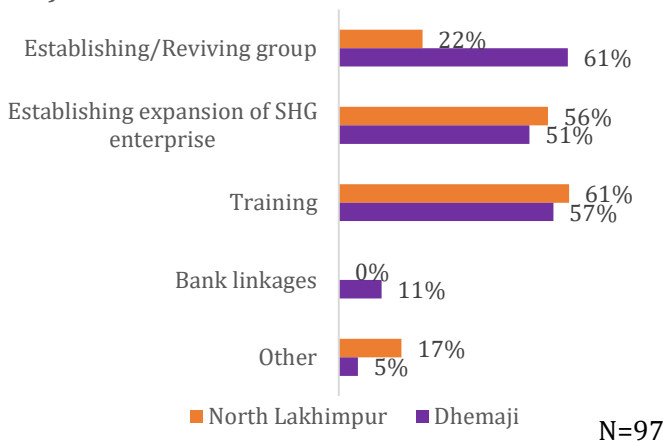
also generating awareness among other farmers.

Figure 17: Perceived improvements due to the training and adoption of agricultural practices (N=21)

The farmers reported an increase in annual income by Rs. 12000 through the improvement in agricultural practices learnt from the

training programs. A larger number of beneficiaries would have increased the level of impact of the intervention. While 53% of the activity beneficiaries also reported an increase in the productivity of crops due to improvement in farm management practices, 42% reported reduced crop loss (Ref. Fig 17).

Economic Empowerment through collectivization: Around 29% of survey respondents were SHG members who received project support, especially in areas including establishing/ expansion of SHG enterprises, training, and establishing bank linkages. With regard to training for SHG members, the project provided support in SHG management, lending and savings management, enterprise management, and bookkeeping. **More than 70% of SHG beneficiaries believe that being an SHG member has helped them in improving income generation capacity, personal savings, and confidence building** indicating the crucial role these institutions play in facilitating women empowerment.

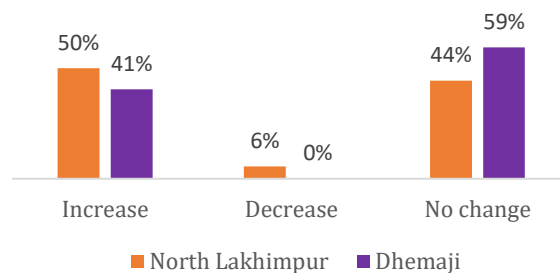


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income generation capacity, personal savings, and confidence building indicating the crucial role these institutions play in facilitating women empowerment.

As indicated in Fig 19, around 50% of the beneficiaries don't perceive a change in their income from SHG enterprises. The reasons as cited by the members were their inability to actively participate in the enterprise activities. The qualitative data also suggests that the interventions like poultry were not sustained after the first batch was sold out the activity stopped. The weaving enterprises have also turned from collective activity to individual activity with only a few villages like Ayengia Patiri successfully continuing at the collective level.

Figure 19 Perceived change in income through SHG enterprises (N=97)



N=97

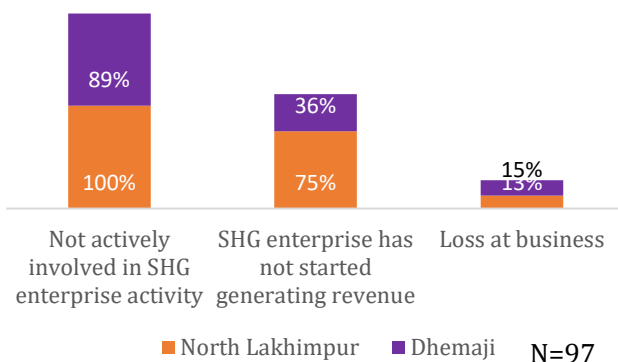


Figure 20: Reason for no change in income from SHG Enterprises (N=97)

Nonetheless, the women are utilizing the handlooms individually and supplementing their household income. There was a **26% increase** in the monthly personal income of the SHG members, as the **median annual income increased from Rs. 9,900 at**

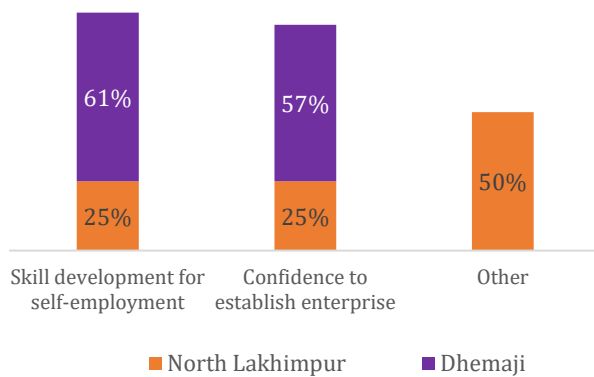
baseline to Rs. 12,600 at the endline, a significant increase at a 95% confidence interval.

Only 36% of SHG beneficiaries perceive an increase in group saving activities and 13% have taken loans for household needs, indicating a limited impact in terms of financial empowerment and awareness.

In the case of poultry, qualitative discussions indicated that unsuitable weather conditions have led to high morbidity among the birds thus leading to loss of income for some of the beneficiaries. The SHG members also noted that poultry and pigs provided to SHG were distributed among members and are reared individually rather than as a collective activity which in turn reduces the scope for business expansion of the SHG-based enterprise.

Skill and Entrepreneurship Development: About 8% of the survey respondents reported receiving skill and entrepreneurship development support through the project. The support received was in the area of enterprise development.

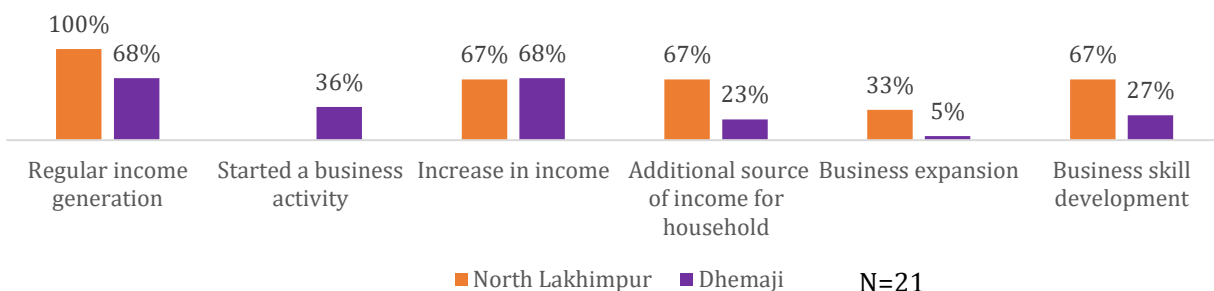
Figure 21 Benefits of the skill training (N=27)



With regard to skill training, the main activity conducted was with the SHG women who were given three days of training on weaving techniques. In the case of enterprise development support, 13% of beneficiaries reported receiving business management training.

Among those who received training, 69% reported that they were able to apply the skills gained through the training indicating the medium level of effectiveness of the intervention. About half (50%) of the beneficiaries of training services also believe that the skills they gained have led to an increase in their income. **A 109% increase from Rs. 12900 (baseline) to Rs. 27000 (endline) in annual income (based on the median) was reported.** This change in income-tested is significant at a 95% confidence interval with respect to the reference value.

Figure 22: Perceived benefits of enterprise development support (N=21)

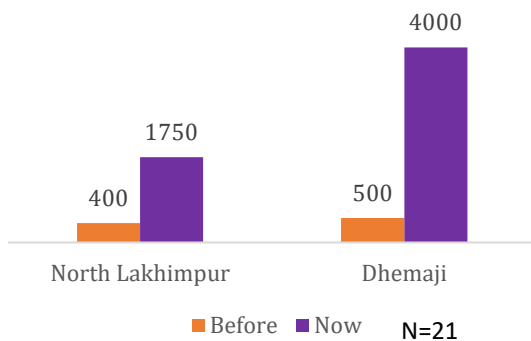


In the case of enterprise owners, more than two-thirds (67%) of respondents reported an increase in income while more than 70% believe that the enterprise has led to consistent income generation since project inception (Ref. Fig. 22).

Community members who were provided physical capital support (grocery cart, tool kits, etc.) reported consistent income gains as the support facilitated the easy distribution of the same. Based on median income change, enterprise owners reported that their average monthly income has significantly increased since project inception as indicated above.

Skill training and enterprise development interventions have reportedly led to improvements in income generation capacity. Interventions aimed at the skill and capacity development were seen as more impactful when accompanied by physical capital support to initiate setting up enterprises.

Figure 23: Change in average monthly income due to enterprise development (N=21)



The increase in income was higher in the Dhemaji district as the median monthly income **increased by 129%** (Ref. Fig 23). People were more inclined towards enterprise-based activities in this district.

Overall, the interventions in SD&LE thematic were successful as they created a medium to high impact. The enterprise-based activities instilled a sense of confidence in women to be able to undertake income-generating activities to support their household income.

4.3.2. Case Study: A Delicate Weave



Bhagyawati Doley is one of the beneficiaries who received training support for handloom weaving. Under the intervention, she went to Guwahati for a three-day training program where she was taught advanced skills in Mekhala weaving. Ms. Doley already knew how to weave clothes on the handloom but under the training organized by the World Vision team, she learned skills on weaving patterns in the Mekhala which enhanced its elegance. After learning the skill and gaining the courage to leave her village, Ms. Doley went to Tamil Nadu to work in a textile factory. She was paid ₹8000/month at the place she used to work. Thus, the interventions from World Vision brought about a major change in her life by empowering her with skills to get employed.

She came back to run a grocery shop in the village which was also supported by World Vision. Her brother had received this support but later on, Ms. Doley took over the responsibility for running the shop. Alongside the shop, she also does the mekhala weaving, which takes her a month per piece, and then sells it in the local market for ₹10000- 15000 per piece. She has become a pillar of support for her family.

“The training in Guwahati encouraged me to step out of house and go to Chennai in search of work. I came back because I did not like the food and it was very hot there. I use my skills to do the weaving at home and directly sell the products in the local market.”- Bhagyawati Doley

4.4. Health and Sanitation

The interventions under Health and Sanitation were imperative in the project villages. Due to the low nutritional status of the districts, kitchen gardens were promoted in the villages to improve the dietary practices of the people.

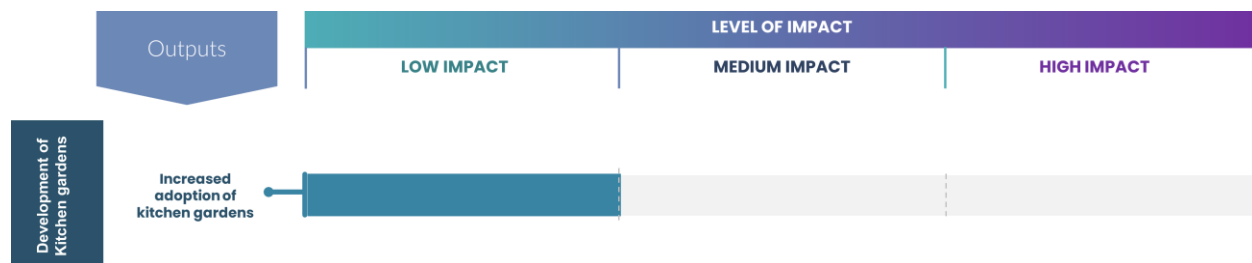
Table 7: Activities under health and sanitation in Assam

Activity Category	Activities
Kitchen Garden	Seeds distribution, kitchen garden formation

4.4.1. Effectiveness and Impact

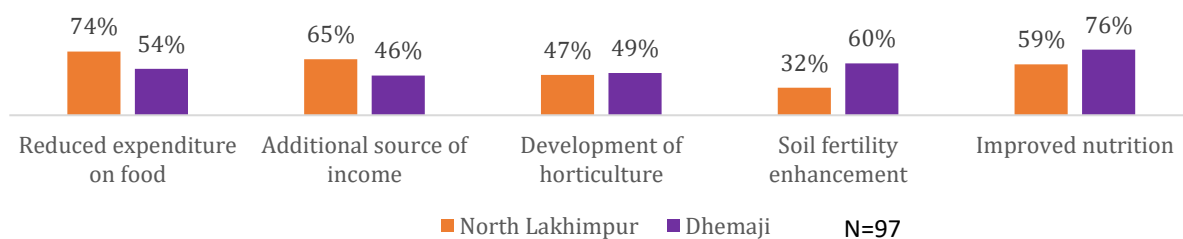
In Health and Sanitation thematic, kitchen gardens were promoted through the distribution of seeds and fertilizer and training on best practices for cultivating a kitchen garden.

Image 9 Overview of impact of interventions under Health and Sanitation¹¹



Kitchen Garden: Due to the prevailing malnourishment issue in North Lakhimpur and Dhemaji, kitchen gardens have been most useful to address this. The HRDP supported the household members by providing them with seeds, training, and inputs like fertilizers and pesticides. **The households saved ₹300 per week on average in buying fruits and vegetables and earned ₹390 per week from the sale.**

Figure 24: Perceived benefits of HRDP-supported kitchen gardens (N=97)



Due to the kitchen garden intervention, a large proportion of the respondents have stated that it has helped in the reduction of expenditure on food and has become an additional source of income. **70% of the beneficiary respondents reported improved nutrition since they include healthy vegetables in their diet while 61% reported reduced expenditure on food(Ref. Fig. 24).** The

¹¹ Impact effectiveness range: Low:- <40%, Medium:- 40%-70%, High:- >70%.

respondents have also stated that they are very satisfied with the support that they have received in setting up their kitchen gardens. However, as per our observations, more training/capacity-building sessions on effectively running a backyard kitchen garden could be more useful.

The intervention under kitchen garden was able to generate a low impact as there was only a 5% change (45% at baseline to 47% at endline) in the proportion of respondents whose area under kitchen garden increased under the HRDP project.

4.4.2. Case Study: Promoting Nutrition in Ayengia Patiri



Kitchen Garden in Ayengia Patiri: Prior to the interventions done by World Vision in the village Mr. Doley did not own any land or practice farming. His primary source of income is farm labour as he owns only a small patch of land which is in the flood prone region. Due to the lack of land he had low inclination towards vegetable cultivation. However, after participating in the training sessions and receiving support from World Vision, Mr. Doley developed interest in creating a kitchen garden. He had some fallow land around his house which he used for this purpose. He grows various vegetables like lauki, taroi, pumpkin, etc. He mostly uses these vegetables for household consumption and distributes the surplus to the neighbors and relatives.

4.5. Promotion of Education

Under the HRD program, the promotion of education included renovation of school buildings across the district and building of sanitation infrastructure in schools, and WASH interventions through awareness sessions and games. To improve learning outcomes, Remedial Education centers were started on the school campuses where Remedial Volunteers taught primary school children to improve their reading and learning abilities.

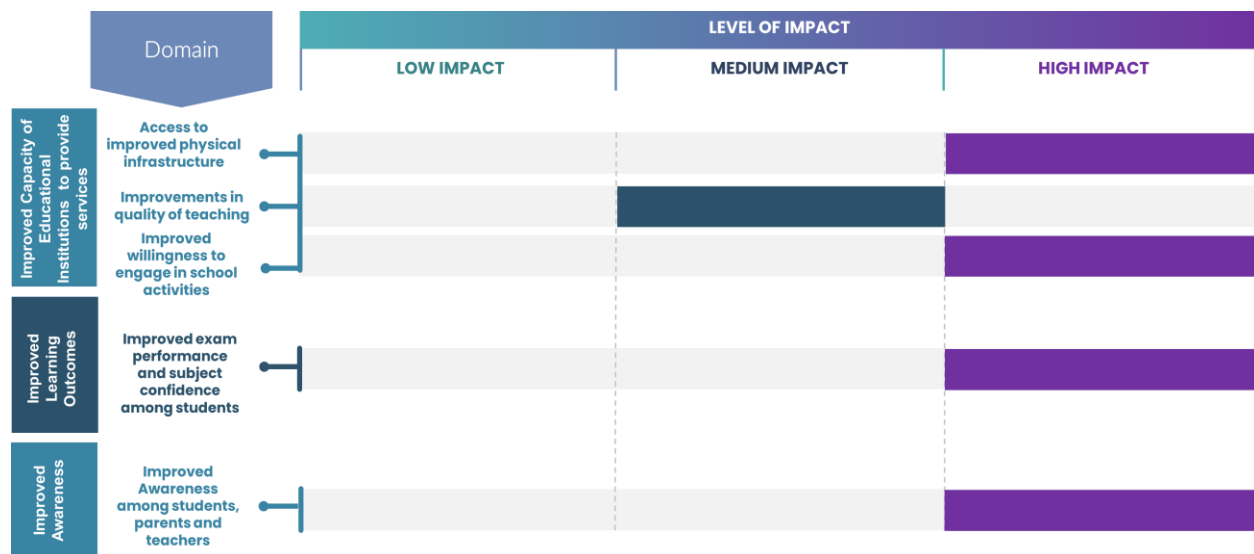
Table 8: Activities under education in Lakhimpur and Dhemaji, Assam

Activity Category	Activities
Educational Institutions Development	Renovation of school buildings and sanitation structures
Education Support	Smart Classrooms, Bala, mini-library, Remedial Education Center
Awareness Generation	WASH games, awareness sessions

4.5.1. Effectiveness and Impact

The project was successful in enhancing the quality of the learning environment for students. The project interventions in schools facilitated not just improvements in infrastructural facilities accessed by students but also focused on capacity building of teachers. Furthermore, the project also facilitated the improvement in the learning abilities of young students who were in their formative years. The interventions created a high impact in the improvement of the student's learning.

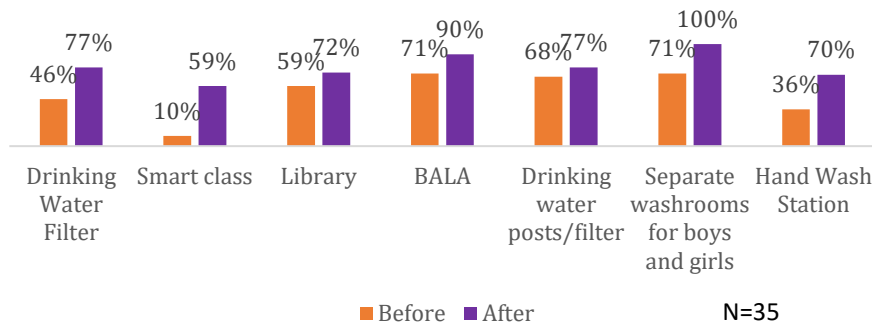
Image 10 Overview of project effectiveness and impact on Education¹²



¹² Impact effectiveness range: Low:- <40%, Medium:- 40%-70%, High:- >70%

Educational Institutions Development: Under the education category, the project focused on setting up smart classes, improving access to libraries, drinking water posts, and separate washrooms for male and female students in addition to classroom furniture and promoting WASH awareness among students. Along with improving the quality of infrastructural facilities the project also focused on capacity building of teachers and community members to enhance the learning environment.

Figure 25: Infrastructural services available/ functional before and after project inception (N=35)



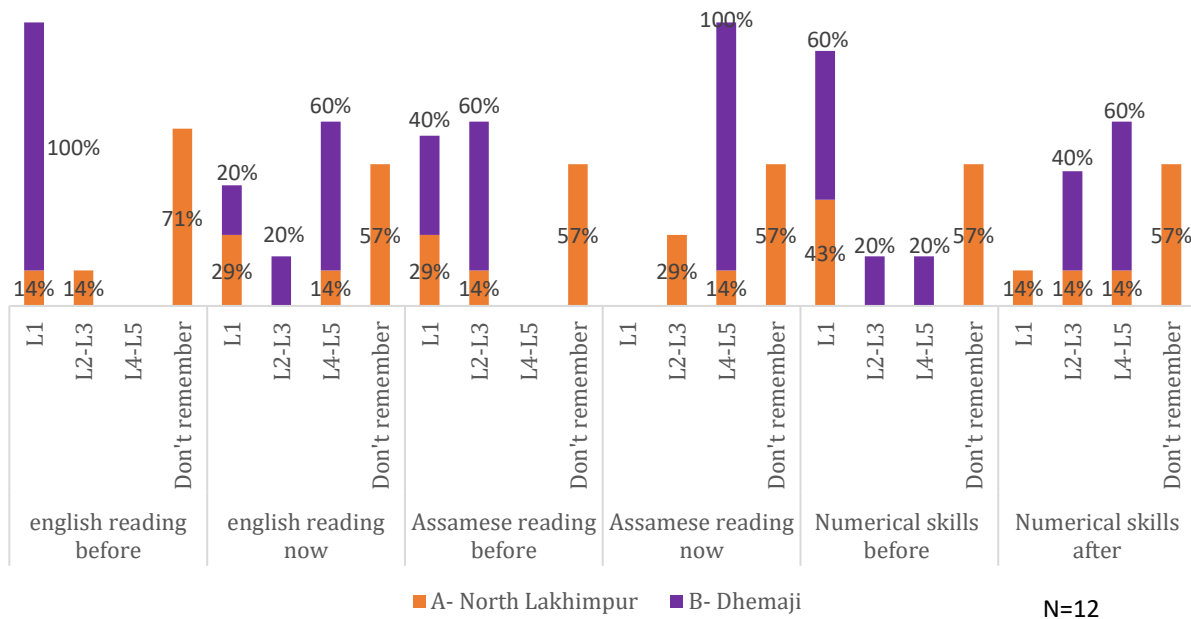
Given the high level of arsenic content in the villages of Lakhimpur, the water filters were much appreciated by the schools. Under the interventions made by the government, around 68% of schools

already had a water filtration unit. Nevertheless, a strong relation between the provision of drinking water facilities and improvement in attendance has been reported by the teachers. All of the schools received smart classrooms but due to improper installation and lack of training only 59% reported that the smart classrooms were still functional (Ref. Fig 25).

The remedial volunteer teachers were given one-day training on teaching methods and understanding children’s psychology. The enhanced capacity of teachers to prepare learning material and engage with children has translated into engaging lessons and better delivery of lessons in remedial classes. For instance, when asked about the improvements in their children’s school in the last 3-4 years, **70% of parents reported that classes are now more interesting while the quality of study material provided has also improved.** However, the teachers did not receive any training for capacity building and improvement in teaching methods.

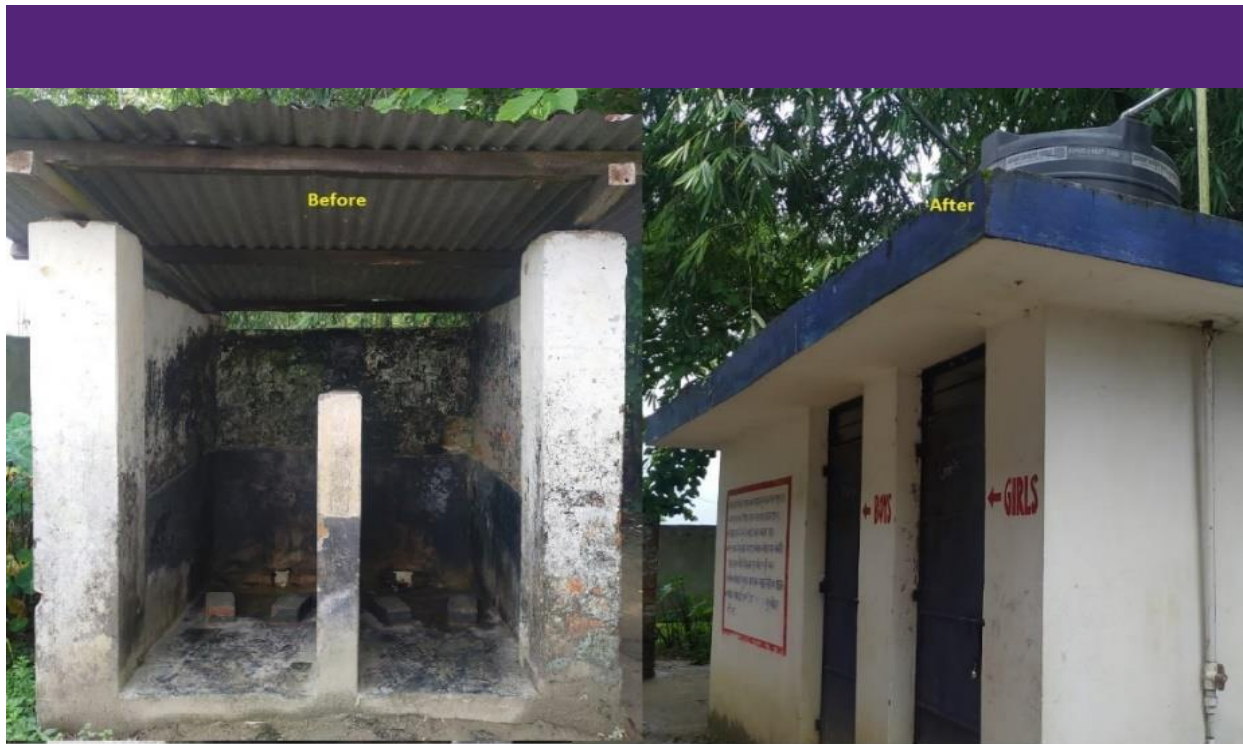
Improved learning outcomes: More than 75% of the students and parents reported that the remedial education classes have led to improvement in the learning capacity and grades of the children. All of the teachers reported that the remedial classes have helped in improving the grades of the students. Teachers and Remedial Education volunteers reported that more than 50% of students improved from L1 to higher level L4-L5 in English, Assamese and mathematical skills (Ref. Fig. 26). Separate washrooms for boys and girls, on the other hand, have directly influenced the time spent at school. Innovative infrastructural facilities have not only made classes more interesting but have also improved the efficiency of teachers as the syllabus is now covered at a faster pace with better retention among students than before.

Figure 26 Improvement in Learning Levels of Students under Remedial Education intervention (N=12)



The interventions under Promotion of Education were highly successful in improving the WASH practices of the children and increasing the access to potable water. There was a significant increase in the learning outcomes of the children due to the remedial learning classes and continuation of such interventions was expected from the beneficiaries.

4.5.2. Case Study: WASHing their way to a healthier future



Primary School Renovation in Christian Basti: The primary school in Christian Basti has received a great deal of support from World Vision in the form of infrastructure renovation and construction interventions. Although the school had a washroom prior to the intervention, it was in a run-down and unhygienic condition. Separate washrooms for both girls and boys were constructed with a water tank to facilitate direct access to water. A separate washroom for physically disabled students was also constructed to promote the accessibility of the school to such students. Along with the washrooms, a rigorous WASH program to promote healthy and safe hygiene practices was also conducted in the school. A handwash station was installed to promote hand-washing practices among the children. As per the headmaster of the school, ever since the handwash stations have been installed, the students have started washing their hands before eating meals and after using washrooms. A mindful behavioral change has occurred in the community.

Additionally, remedial education classes have been effective in improving the learning levels of primary class children. The students improved from L1 to L5 in the learning assessment tests.

“The kids now wash their hands everytime they use the toilet. Even when they have their meals they wash their hands first.”- teacher at Christian Basti

4.6. Sustainability

Most of the beneficiary farmers are currently practising the services and practices accessed through the project under farm management. These are namely adoption of SRI cultivation, inter-cropping and use of organic fertilizer. Farmers believe that continued adoption of sustainable farming solutions will result in notable improvements in productivity and reduction of input costs as is evident in earlier sections. **More than 95% of solar light beneficiaries reported that solar street lights are still functioning indicating the sustained impact of the intervention.** In the case of disaster management, while beneficiaries report high effectiveness in terms of reduced risk for human and livestock lives, proper and continued maintenance of disaster management structures built under the project is a growing concern considering the lack of initiative among the community.

In the case of both agricultural training and skill training, more than 90% are still utilizing at least one practice/skill they learned through the project. This in turn indicates sustained adoption and impact, especially in the case of skill training activities. SHG enterprise beneficiaries, who were part of weaving-related interventions have been continuing their work either individually or collectively. On the other hand, poultry rearing beneficiaries reported early death of the chicks, leading to no income generation. Animal shelters for pigs are effectively utilized. Interventions aimed at skill and capacity development were seen as more impactful when accompanied by physical capital. All of the enterprise owners are continuing with the project-supported enterprises.

The community is aware of the usage of kitchen gardens and has been trained in the same. The beneficiaries reported that the lack of availability of good quality seeds has been an impediment after the project support was stopped.

The project also focused on improving the learning environment in intervention schools by reducing infrastructural gaps, improving the quality of existing infrastructure, and improving teaching quality. Findings from the quantitative survey indicated that the structures built in the school namely separate washrooms for boys and girls, hand wash stations and libraries are still functional and are utilized frequently. The remedial education classes have been lauded by both the parents and teachers and they hope for more such interventions in future. **The lack of follow-up services for the installation or repair of smart classes and almirah for the library has affected the intervention across all the schools. Around 90% of teachers reported that the smart classroom was not in working condition.**

Support provided	Structures established	Technical Know-how	Usage	Maintenance
<i>NRM</i>				
Farm Management	✓	✓	✓	✓
Irrigation Management	✓	✓	✓	✓
Clean Energy	✓		✓	✓
Disaster Management	✓	✓	✓	X
Skill Training and Livelihood Enhancement				
Agriculture Training and Support		✓	✓	X
SHG-Based Women Empowerment		✓	✓	✓
Skill Training		✓	✓	

Entrepreneurship Development	✓	✓	✓	✓
Health and Sanitation				
Kitchen Garden	✓	✓	✓	✓
Education				
Educational Institutions Development	✓	✓	✓	✓

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 in order 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 program introduced significant variability in the interventions. Therefore, it was not possible to ascribe a single impact indicator that might be able to accurately, capture the overall performance of HRDP. Since the index aimed to create comparability across the various clusters, similar indicators were used for the calculation of HRDI in Assam. Based on our calculation, the HRDI for the studied clusters is presented in the table below:

Table 9: Holistic Rural Development Index for North Lakhimpur and Dhemaji, Assam

Domain	NRM		Skill and Livelihood		Health and Sanitation		Education		Overall HRDI	
	Base line	End line	Base line	End line	Base line	End line	Base line	End line	Baseline	Endline
HRDI Score	0.07	0.13	0.13	0.18	0.11	0.12	0.13	0.19	0.44	0.63
% Change	86%		38%		9%		46%		43%	

Since the program did not have an available baseline, the baseline was captured through the recall method. The indicators were selected and assigned weights based on their relative contribution to the final expected outcome across all domain-wise interventions. While most of the indicators were found to be relevant for the study in Assam, some needed modifications in accordance with the program and also in accordance with the study design, and the information collected. The detailed methodology can be accessed in Annexure 6.3.

Further, the thematic-wise indicators were assigned weights to arrive at the composite HRDI score of **0.63** indicating a **notable positive change toward the desired impact** from the baseline score of 0.44(Ref. Table 9). **The detailed methodology and indicators selected can be accessed in Annexure 6.3.**

5. Conclusion

5.1. Summary of Findings

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

In the assessed HRD programs in 2 clusters of North Lakhimpur and Dhemaji, Assam, the major focus areas for intervention were Natural Resource Management (NRM), Skill Development & Livelihood Enhancement, Promotion of Education, and Nutrition. Since the project implementation was fairly recent therefore its effectiveness in creating noticeable changes in the income generation capacity of farmers through improved productivity, reduced input cost and capacity building of farmers cannot be deemed with certainty. Nevertheless, **the irrigation pump intervention has been beneficial to the farmers in the current sowing season.** The project brought about changes in facilitating access to clean energy solutions such as solar lights and solar lamps. **Being a region frequented by floods, the project interventions in disaster management have been timely and effective** in reducing the community risks in terms of loss of life, property, and poor health.

The project activities within skill and livelihood enhancement also have opened up economic opportunities not just for farmers, but for women and youth in the community. These beneficiary categories, **who otherwise have limited access to economic opportunities benefitted from the project by gaining the skills, technical support, and physical capital to undertake and expand entrepreneurial activities during the project period.** While completely sustained profit generation is yet to be achieved, the project was successful in initiating entrepreneurial activities in the community among women and youth.

The adoption of kitchen gardens was a high impact and has not only contributed to improved dietary diversity but also served as an additional source of income for the beneficiaries.

The project has also contributed toward improving and enhancing the infrastructural and learning environment at schools. To facilitate the same, several project interventions were undertaken including the construction and renovation of physical infrastructural facilities such as drinking water posts, classroom furniture, and separate washrooms for boys and girls **that led to improved capacity of students to spend more time at school, be actively involved in school activities and has even led to increased enrolment according to the teachers.** Furthermore, with the aim of improving the learning environment, project support was also provided in terms of smart classes, and libraries in addition to capacity building of teachers for the adoption of innovative teaching methods. The project also contributed to improving the learning outcomes through remedial classes. Nevertheless, to bridge the gaps in implementation and address the challenges, some of the recommendations are discussed in the following section.

5.2. Recommendations

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

Natural Resource Management: The scope and scale of interventions related to farm management were limited to a small number of farmers hence widening the scope would increase the scale of impact. A **combination of training and physical infrastructure support would lead to better maintenance and sustained effectiveness of interventions.** Furthermore, the trained farmers could also help promote the farming practices like SRI.

Skill Training and Livelihood Enhancement: Findings from the field indicate that SHG-based weaving enterprises are continuing at a collective level at present in some of the villages while in some others they have broken down to individual activities. Moving forward, interventions pertaining to SHG activities and their sustainability could be more focused upon by ensuring **handholding support for enterprise development and capacity building for collective action.**

The agricultural interventions were also limited to a small number of farmers thus limiting their benefits. The beneficiary farmers expressed that lack of local availability of inputs, high expenses, and poor access to adequate water as challenges for adoption. **Interventions to improve local availability of inputs and capacity building of resource persons to provide handholding support** to farmers could resolve such issues to an extent.

Health and Sanitation: Enhancing the project's scope to focus on health-related interventions would promote the impact in the health dimension. Conducting health camps and supporting the government health infrastructure will support the community in access to better health services.

Promotion of Education: Though washrooms, and libraries are functional, ensuring proper maintenance would be required to sustain them for a long time. Smart Classrooms in more than 50% of schools have become non-functional due to technical issues. To ensure the same, **community members need to be sensitized and involved in the maintenance process through institutions such as SMCs.** Additionally, rigorous follow-up support is needed for infrastructural interventions to ensure that the benefit is being availed by the beneficiaries.

6. Annexures

6.1. Detailed Activity List

Sl No	Focus area	Category	Sub-category	Activity	Beneficiary Type
1	Promotion of education	Educational Institutions Development	Infrastructure - Infrastructure renovation	Promotion of joyful learning and renovation of toilet and drinking water facilities, WASH awareness	School
2	Promotion of education	Educational Institutions Development	Infrastructure - Infrastructure renovation	Renovation of government school buildings, Smart class, mini library	School
3	Promotion of education	Promotion of education	Remedial Education Classes	Improvement in learning outcomes through remedial coaching	School
4	Health and sanitation	Nutrition	Kitchen Garden	Kitchen Garden	Community
6	NRM	Farm Management	Crop Diversification	Demonstration of Intercropping Model, SRI	Farmers
7	NRM	Farm Management	Farm technique - SRI	Post or Pre-flood paddy cultivation through SRI and Conventional methods for comparative study	Farmers
8	NRM	Water Management - Agriculture	Irrigation method - Other	Irrigation Pumps	Farmers
9	NRM	Clean Energy	Street Solar Lights installation	Promotion of renewable energy for small-scale entrepreneurs (Market places and common space)	Community
10	NRM	Disaster Management	Disaster Management	Construction of elevated stilts and handpumps, dry food ration distribution, disaster preparedness training	Community
11	Skill development and livelihood enhancement	Skill Training	Skill Training	Training cum entrepreneurship development support to youth and women	youth and women
12	Skill development and livelihood enhancement	Entrepreneurship Development	Fishery	Development of ponds for fish breeding	SHG Women
13	Skill development	Entrepreneurship Development	Piggery	Development of Pig breeding farm	SHG Women

	and livelihood enhancement				
14	Skill development and livelihood enhancement	Entrepreneurship Development	Poultry	Development of poultry farm model	SHG Women
15	Skill development and livelihood enhancement	Entrepreneurship Development	Other Small business	Development of handloom weaving unit	SHG Women

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 tests);

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

The quantitative household survey was administered for five thematic areas in the district. A detailed outcome harvesting process was carried out during the inception phase, and after discussions with the HDFC Bank team, the outcome indicators were finalized. Based on the scale and intensity of interventions the sample for each thematic area was decided to keep the total number of household survey respondents to 400 per cluster.

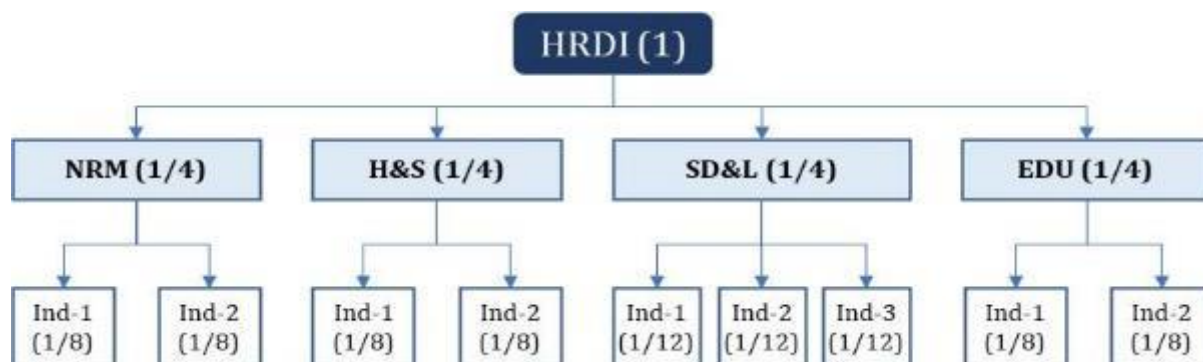
6.3. HRDI Methodology

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, in 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 weights¹³



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

Project X			
<i>Natural Resource Management</i>	Average net income from farming	$(1/4) \times (1/3) = 0.083$	
	Percentage of farmers reporting access to irrigation	$(1/4) \times (1/3) = 0.083$	
	The area under irrigation (Ha)	$(1/4) \times (1/3) = 0.083$	
<i>Health and Nutrition</i>	Proportion of farmers with area under the kitchen garden above reference value	$(1/4) \times (1/1) = 0.25$	
	<i>Livelihoods and Skill development</i>	Average monthly income of household from Livestock (INR)	$(1/4) \times (1/4) = 0.0625$
		Average monthly income from enterprises (INR)	$(1/4) \times (1/4) = 0.0625$
		Average monthly income of SHG women from enterprise (INR)	$(1/4) \times (1/4) = 0.0625$
<i>Education</i>	Average monthly income from Enterprises (INR)	$(1/4) \times (1/4) = 0.0625$	
	Percentage of students reporting increased access to functional school physical infrastructure (drinking water posts, separate washrooms, etc.)	$(1/4) \times (1/2) = 0.125$	

¹³ NRM: Natural Resource Management | H&S: Health and Sanitation | SD&L: Skill Development and Livelihoods | EDU: Education

Percentage of students reporting increased access to functional learning infrastructure (library, science labs, learning aids, 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	Weight	HRDI	Endline	Weight	HRDI	% Change
NRM	The average productivity of crops (3 major crops) grown (quintal per acre)	0.21	33%	0.07	0.34	33%	0.13	86%

NRM	Percentage of farmers reporting access to irrigation	0.04	33%		0.10	33%		
NRM	The area under irrigation (Acre)	0.04	33%		0.10	33%		
H&S	Proportion of farmers with area under kitchen garden above the reference value	0.45	100%	0.11	0.47	100%	0.12	9%
Skill	Average annual income of household from Enterprises (INR)	0.11	25%		0.20	25%		
Skill	Percentage of households with improved skills in Agriculture	0.17	25%	0.13	0.23	25%	0.18	38%
Skill	Average annual income of household from Livestock (INR)	0.12	25%		0.16	25%		
Skill	The average annual income of SHG women from enterprise (INR)	0.12	25%		0.15	25%		
ED	Percentage of students reporting increased access to School infrastructure (library, sports equipment etc.)	0.23	33%	0.13	0.37	33%	0.19	46%
ED	Average dropout of students from schools	0.28	33%		0.41	33%		
Total				0.44			0.63	43%

6.4. Overview of Impact Calculation

Table 10 Overview of impact of interventions under NRM

Goal: Effective utilization of local resources and adequate access to water for various purposes

Domain	Key Indicators	%Value	Avg	Impact Level
1. Increased income from agriculture				
1.1 Land/ crop productivity	1.1. (a) Proportion of farmers reporting an increase in production of crops that were supported under HRDP	77%	61%	Medium
	1.1. (b) Proportion of farmers reporting increased use of natural fertilizer	61%		
	1.1. (c) Proportion of farmers reporting increased income from crops that were supported under HRDP.	93%		
	1.1.(d) Average increase in income from crops that were supported under HRDP (% change)	12%		
1.2 Access to the farm management infrastructure	1.2(a) Proportion of beneficiaries satisfied with the quality of available services (in farm management)	92%	59%	Medium
	1.2 (b) Proportion of farmers reporting project interventions in seeds, tools and irrigation leading to an increase in production	40%		
	1.2 (c) Proportion of farmers reporting project interventions leading to an increase in income	88%		
	1.2 (d) Proportion of farmers currently practising organic farming/conservation agriculture/other sustainable practices	33%		
	1.2 (e) The proportion of farmers reporting an increase in the use of natural fertilizers?	40%		
1.3 Land under irrigation	1.3. (a) Increased area under irrigation	39%	51%	Medium
	1.3. (b). The proportion of farmers who received support for irrigation	63%		
2. Increased use of clean energy solutions				
2.1 Adoption of clean energy infrastructure	2.1 (a) Proportion of HHs using clean energy infrastructure (Base=all)	58%	75%	High
	2.1 (b)Proportion of households reporting benefits from using clean energy infrastructure (Base=clean energy beneficiaries)	91%		
3. Communities have reduced risk and vulnerability due to natural disasters				
3.1 Improved coping capacity of community	3.1 (a) Proportion of community members trained on techniques of Search, Rescue and First Aid after intervention	5%	36%	Low
	3.1(b) Proportion. of community members reporting improved health after the intervention during disasters	53%		
	3.1 (c) Proportion of community members demonstrating disaster preparedness in livelihood activities after intervention (improved awareness)	33%		

	3.1 (d) Proportion of community members reporting reduced risk life, livestock and property	52%		
3.2 Access to the disaster management infrastructure	3.2 (a) Proportion of community members who have access to hygiene kit	23%	36%	Low
	3.2 (b) Proportion of community members who received dry food ration	83%		
	3.2(c) Proportion of HHS who received training on disaster management	50%		
	3.2 (d) Proportion of HHs who had access to drinking water sources during disasters after intervention	9%		
	3.2 (e) Proportion of HHs who had access to sanitation units during disasters after intervention	17%		

Table 11 Overview of impact of interventions under ST&LE

Goal: More Income for the HHs through Diverse income sources locally to farmers, youth and women				
Domain	Indicators	%Value	Output Avg	Impact level
1. Improved access to agricultural training and services				
1.1 Access to Agriculture training and services	1.1 (a) Proportion of farmers who reported project training services are useful	86%	71%	High
	1.1(b) Proportion of farmers who demonstrate awareness regarding sustainable farming practices	55%		
1.2. Adoption of improved farming practices	1.2 (a) Proportion of farmers who adopt scientific agricultural practices	90%	79%	High
	1.2(b) Proportion of beneficiaries reporting an increase in productivity due to better farm management	53%		
	1.2 (c) Proportion of farmers reporting increased income	94%		
2. Economic empowerment through collectivization (Only for SHG members)				
2.1. Formation/ revival of SHG based Enterprises	2.1 (a) Proportion of members who received support with establishing/reviving SHGs	56%	76%	High
	2.1 (b) Proportion of members whose SHGs are currently functioning	96%		
2.2 Development of entrepreneurship	2.2 (a) Proportion of SHG members who received training	58%	49%	Medium
	2.2 (b) Proportion of SHG members undertaking entrepreneurial activities	52%		
	2.2 (c) Proportion of SHGs with increased savings	42%		
	2.2 (d) Proportion of SHG members reporting improved income	42%		
3. Enhanced capacity for regular income generation				

3.1 Enhanced employable skill development	3.1(a) Percentage of youth who accessed skill development training	89%	70%	Medium
	3.1(b) Percentage of youth who report improved income through skill development	50%		
3.2 Access to self-employment and entrepreneurial opportunities	3.2(a) Proportion of beneficiaries who established/ expanded entrepreneurial activities	62%	55%	Medium
	3.2(b) Proportion of beneficiaries reporting improved capacity to undertake entrepreneurial activities	52%		
	3.2(c) Proportion of beneficiary HHs reporting an increase in income	50%		

Table 12 Overview of impact of interventions under Health & Sanitation

Goal: Healthy lives and good hygiene practices				
Domain	Indicators	%Value	Avg	Impact Level
1. Development of Kitchen gardens				
1.1 Increased adoption of kitchen gardens	1.1(a) Proportion of HHs reporting income gains from kitchen gardens	93%	86%	High
	1.1 (b) No of HHs received seeds/training in the kitchen garden	93%		
	1.1 (c) No of HHs with improved vegetable/fruit consumption due to kitchen gardens	86%		
	1.1 (d) Proportion of HHs reporting improved nutrition	70%		

Table 13 Overview of impact of interventions under Education

Goal: Active participation and effective learning of children in quality education centres				
Domain	Indicators	%Value	Avg	Impact Level
1. Improved capacity of educational institutions to provide services				
1.1 Access to improved physical infrastructure	1.1 (a) Proportion of students/schools who report gaining access to functioning smart classrooms/ Bala/science labs/libraries/learning aid/furniture/sports equipment	86%	78%	High
	1.1 (b) Proportion of schools who gained access to clean and functioning sanitation units/drinking water posts at education institutions	100%		
	1.1 (c) Proportion of schools reporting regular maintenance of smart classrooms/sanitation units/science labs/drinking water units/sports infra/others	48%		
1.2 Improvements in quality of teaching	1.2 (a) Proportion of teachers regularly utilising smart classrooms/libraries	61%		Medium

	1.2 (b) Proportion of students who prefer/regularly use smart classrooms/science labs/ libraries for lessons	55%		
	1.2 (c) Proportion of parents who report improvements in teaching quality	70%		
	1.2 (d) Proportion of teachers reporting improved capacity to adopt innovative teaching methods (Base= teachers who received training)	12%		
	1.2 (e) Awareness among teachers regarding child development (Base= teachers who received training)	12%	42%	
1.3 Improved willingness to engage in school activities	1.3 (a) Teachers reporting improvements in attendance due to improved infrastructure	86%		High
	1.3 (b) Proportion of teachers reporting an increase in enrolment post infrastructure development	76%		
	1.3 (c) Proportion of institutions reporting a decrease in dropout rates	49%	70%	
2. Improved learning outcomes				
2.1 Improved exam performance and subject confidence among students	2.1 (a) Proportion of students who gained access to the remedial class	73%		High
	2.1 (b) Proportion of students reporting an increase in confidence in various subjects (lessons are easy to understand, more interesting etc.)	80%		
	2.1 (c) Proportion of teachers reporting improvements in learning outcomes due to infrastructural facilities at institutions (classes interesting, attendance)	74%	76%	
3. Improved Awareness				
3.1 Improved Awareness among students, parents and teachers	3.1 (a) Awareness activities conducted	93%	93%	High

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