

# 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- <i>GVM</i> .....	8
1.3. Purpose and objectives of the study.....	9
2. Research Methodology.....	11
2.1. Design and Methodology.....	11
2.2. Sample Size and Distribution .....	12
3. Program Review .....	13
3.1. Program Design and Implementation .....	13
3.2. Program Relevance.....	14
4. Study Findings .....	16
4.1. Demographic profile .....	16
4.2. Natural Resource Management.....	17
4.2.1. Effectiveness and Impact.....	17
4.2.2. Case Study.....	21
4.3. Skill Training and Livelihood Enhancement.....	22
4.3.1. Effectiveness and Impact.....	22
4.3.2. Case Study 1.....	29
4.3.3. Case Study 2.....	30
4.4. Health and Sanitation .....	31
4.4.1. Effectiveness and Impact.....	31
4.4.2. Case Study.....	34
4.5. Promotion of Education.....	35
4.5.1. Effectiveness and Impact.....	35
4.6. Sustainability .....	38
4.7. Holistic Rural Development Index (HRDI) .....	39

5. Conclusion.....	40
5.1. Summary of Findings.....	40
5.2. Recommendations .....	41
6. Annexures.....	42
6.1. Sampling Methodology .....	42
6.1.1. Quantitative Sample Size Calculation.....	42
6.1.2. Qualitative Sample Size Calculation.....	43
6.2. Sustainability Thematic wise matrix.....	43
6.3. HRDI Methodology .....	43
6.4. Overview of Impact Calculation .....	47

## List of Tables

Table 1: Summary of HRDI scores for Assam .....	7
Table 2: Summary of key income indicators .....	7
Table 3: Quantitative Sample Covered .....	12
Table 4: Qualitative sample size covered .....	12
Table 5: Activities under NRM in Assam.....	17
Table 6: Activities under skill training and livelihood enhancement in (enter state) .....	22
Table 7: Activities under health and sanitation in Assam .....	31
Table 8: Activities under education in Assam .....	35
Table 9: Holistic Rural Development Index for Assam .....	39
Table 10: An overview of project impact in NRM .....	47
Table 11: An overview of project impact on skill training and livelihood enhancement.....	48
Table 12: An overview of project impact on health and sanitation.....	49
Table 13: An overview of project impact on Education.....	49

## List of Images

Image 1: Training of field team held at Guwahati, Assam .....	12
Image 2: Paddy cultivation using SRI.....	14
Image 3: Arsenic removal water plant.....	14
Image 4: Weaving loom set up under the project.....	15
Image 5: Cycle stand constructed at a model school in Karia .....	15

## List of Figures

Figure 1: Overview of project impact.....	7
Figure 2: Conceptual framework of the implementation.....	10
Figure 3: Areas covered under the study.....	10
Figure 4: Project Planning and implementation process.....	13
Figure 5: Social profile of the respondents.....	16
Figure 7: Sources of Income.....	16
Figure 6: Literacy level of the respondents.....	16
Figure 8: An overview of project effectiveness and impact in NRM.....	17
Figure 9: Increase in agricultural income.....	18
Figure 10: Reasons reported for the increase in income (n=138).....	18
Figure 11: HRDP interventions that contributed to an increase in crop productivity.....	19
Figure 12: Perceived benefits of solar street lights (n=375).....	20
Figure 13: An overview of project effectiveness and impact and skill training and livelihood enhancement.....	22
Figure 14: Respondents practising different practices.....	23
Figure 15: Agriculture practices learned and adopted through HDFC Bank training (n=158).....	24
Figure 16: Perceived improvements due to the adoption of agricultural practices (n=158).....	24
Figure 17: Enterprise/Business Activity of SHGs supported by HDFC bank project (n=135).....	25
Figure 18: SHG trainings received as part of the project (n=264).....	26
Figure 19: Perceived change in income through SHG enterprises (n=135).....	26
Figure 20: Perceived benefits of enterprise development support (n=236).....	27
Figure 21: Perceived primary benefits of livestock interventions.....	28
Figure 22: An overview of project effectiveness and impact on health and sanitation.....	31
Figure 23: Perceived life changes due to attending sensitization sessions (n=310).....	32
Figure 24: Health and sanitation practices learned through different sources (n=394).....	33
Figure 25: Changes observed in health due to change in the source of drinking water (n=22).....	34
Figure 26: An overview of project effectiveness and impact on Education.....	35
Figure 27: Infrastructural services available before and after project inception (n=23).....	35
Figure 28: Usage of library by students (n=29).....	36
Figure 29: Benefits of remedial coaching classes (n=24).....	37
Figure 30: Changes observed among students due to the project infrastructure developments (n=23).....	37

## Executive Summary

The study centers on measuring the impact of the Holistic Rural Development Programme (HRDP) of HDFC Bank that was **implemented by Gram Vikas Mancha in the Nalbari district in Assam**. This study largely focused on understanding the overall process that the HDFC Bank and the implementing organization undertook in carrying out the programme activities, the key milestones achieved, the impact created by these activities, and the challenges faced. The **key focus areas of the intervention were Education, Health and Sanitation, Natural Resource Management, and Skill building & Livelihood enhancement**. The framework used for the impact assessment was adaptive version of the DAC criterion- Relevance, Effectiveness, and Sustainability. **A comprehensive methodology, comprising both primary and secondary data collection was used** for the assessment and the assessment was carried out in a participatory manner involving all the key stakeholders of the programme. The study included a **sample size of 424** project beneficiary households as respondents as against the planned sample of 400.

**NRM:** Increasing agriculture productivity was one of the major objectives of the programme as farmers practiced traditional methods of farming, and had less knowledge about what inputs to use, farm husbandry, access to farm equipment, facilities, etc. Therefore, as a result of the special variety of seeds, machines, and knowhow of farming techniques provided, a **54% increase in the net median income of farmers was observed**. As per data, **training/demonstration of the SRI cultivation method (71%) and organic manure (77%) was reported as the main causes of an increase in income from agriculture**. When looked at crop-wise, **97% of farmers who cultivated paddy and 95% of farmers who cultivated mustard reported an increase in production after the project**. Moreover, the **farm machinery support and irrigation facilities for the members of the farmers' group in Barajol has been very effective in intensifying the production of paddy and other crops** as farmers can cultivate land in both Kharif (rainy) and Rabi (winter) seasons due to access to irrigation. Further, **78% of farmers also reported a decrease in input cost** for reasons like HDFC interventions in farming techniques (68%), intervention in organic farming (68%), and intervention in seeds and tools (59%). **The input price calculated shows a 23% decrease**. The solar street lights installed in the programme villages have benefited the community and **95% of the beneficiaries reported the solar street lights being functional and being used even after the end of the project**.

**Health and Sanitation:** The challenges faced by the community in terms of accessing pure drinking water and awareness regarding the need for proper nutrition were recognized by the programme. 73% of the households availed of the health services under the programme. **Mothers, children, and adolescents have benefitted from training in nutrition management. Street plays were conducted to raise awareness of health issues and the consequences of substance abuse**. The community observed changes in lifestyle after attending the awareness sessions like improvement in dietary habits (48%), knowledge about critical health issues (77%), improved health status of household members (45%), etc. but the impact seems to be medium level. About **82% of the respondents observed a change in drinking water source and have been consuming the water from the arsenic-free water treatment plant for more than 2 years**. They are extremely satisfied



with the intervention, however, **people from other villages and people living far from the plant expressed the need for avail the same.** Nevertheless, the **change in the source of drinking water has brought a change in household health with relief in stomach-related problems (77%), a decrease in instances of water-borne diseases (73%), an increase in appetite (50%), etc.**

**Skill Training and Livelihood Enhancement:** As women hold marginal positions in society and their families and are financially dependent on male family members, working towards the skill and livelihood development of women became an essential component of the project. As per our analysis, the intervention on the involvement of SHG members in enterprise development has been effective overall and **99% of the respondents reported an increase in their income** as most enterprises supported are still functional. Although members received training on the process of production, **the support received for enterprise management (21%), and marketing (17%) was low.** Further, in the case of enterprise owners, more than 90% of respondents reported an increase in income and seemed satisfied with the support provided. They want to expand their businesses. Moreover, the programme supported the community members with livestock birds and livestock management services to help them with an additional source of nutrition and income. **There has been a 50% increase in monthly income from livestock rearing and** most of the farmers are continuing with poultry/goatery/piggery etc. even after the end of the project. Farmers were trained to upgrade their skills. The **training was useful in improving their capacity to increase productivity (89%), awareness of sustainable farming practices (44%), and reduction in input cost (51%).** Moreover, there has been a change in organic manure application and SRI did before vis a vis after the project with a 19% and 54% increase respectively. The farmer groups formed also reported benefitting in the form of additional sources of income (88%) and reduced risk in farming (55%).

**Promotion of Education:** Proper infrastructure holds extreme importance in improving education outcomes. The need-based **infrastructural developments undertaken in schools have been useful and have been greatly appreciated by the students and school authorities. They have also caused an increase in enrollment rate (74%) and attendance (91%).** However, the intervention to promote digital literacy doesn't seem very effective as teachers aren't skilled enough to use computers and are therefore not making use of the same. The support for the library room has helped in inculcating reading habits. **Toilets renovated and constructed in schools have helped in making students attend school regularly (100%).** Although maintaining clean toilets is still a challenge as students don't practice personal hygiene despite various awareness sessions. **71% of the students interviewed also reported being benefited from remedial coaching classes available for high school students** which have helped them in improving their marks (96%) and increasing interest in education (79%). The qualitative findings highlighted students' appreciation for the classes as they were free of cost and helped them in clarifying their doubts. The fellowships received by economically weak students have helped them in continuing with higher studies.

**HRDI Indicators:** For assessing the effectiveness of the interventions, the study has used the existing Holistic Rural Development Index (HRDI) created by the programme. The HRDI is arrived at by defining key outcome indicators for each of the domains and developing a composite index. The composite HRDI score indicated a positive impact at **0.54** for Nalbari.

**Table 1: Summary of HRDI scores for Assam**

Domain	NRM		Skill and Livelihood		Health and Sanitation		Education		Overall HRDI	
	Baseline	Endline	Base line	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
HRDI Score	0.12	0.15	0.12	0.18	0.02	0.10	0.06	0.12	0.33	0.54
% Change	25%		50%		400%		100%		64%	

**Table 2: Summary of key income indicators**

Income Indicators (based on median)	Before	After	% Change
Median Monthly Net Income from Agriculture (INR)	29,000	44,700	54%
Median Monthly Income from Livestock (INR)	4,000	6,000	50%
Median Monthly Income from Enterprise	4,000	6,000	50%
Median Monthly Income from SHG (INR)	3,000	5,000	66.6%
Average Productivity of 3 major crops (kg /Acre)	1,277	1,573	23%

**Figure 1: Overview of project impact**

	Health and Sanitation	Skill Training and Livelihood Enhancement	Natural Resource Management	Promotion of Education
<b>Overview of Activities</b>	Sensitization and interface programme on health issues, promotion of health institutions, arsenic treatment plant, support to ICDS, raised toilets	Promotion of poultry, piggery, fishery, Farmer training, SHG empowerment and enterprise development	Construction of vermi pits, promotion of improved practices in paddy and mustard cultivation, paddy seedling factory, seed bank, Agriculture Resource Centre solar street lights	Remedial classes, non-residential life skill camps, promotion of model school with infrastructural development, fellowship support
<b>Areas of Improvement</b>	77% report increased knowledge about health issues through the sensitization programme, 77% report relief in gastric problems due to clean water	184% increase in farmers using organic manure and SRI, 99% SHG women reported increase in income from SHG enterprises	71% farmers reported increase in farmers' income due to training in SRI cultivation method, 78% farmers also reported decrease in input cost	Improved infrastructural support like classrooms, cycle stand, washrooms, drinking water, library
<b>Challenges</b>	Arsenic contaminated drinking water in other programme villages,	Drop in motivation to continue business activity due to low profitability and difficulty in procurement of inputs, lack of market knowledge and links	Lack of irrigation facilities for ease of cultivation all round the year	Maintaining toilets and classrooms clean
<b>Recommendations</b>	Need for more arsenic treatment plants, more health sensitization programmes	handholding support, market linkages, more capacity building training	Follow up services, Convergence with Agriculture Research Institutions for flood resistant seeds, expansion of seed banks, irrigation facilities	Capacity building of teachers (digital infrastructure), continuation of remedial coaching classes (for 10 <sup>th</sup> and 12 <sup>th</sup> class students), convergence with government for fellowship and sports support



# 1. Introduction

## 1.1. Background of the Study

The rate of poverty in India continues to remain high with a large proportion of the rural population being engaged in agriculture and dependent on rain-fed irrigation. Therefore, under its CSR initiative, the HDFC bank supports programs to deliver holistic rural development and aid the growth and prosperity of the rural population. Within Parivartan, the CSR initiative, the “Holistic Rural Development Programme” (HRDP) is the flagship CSR program under which non-governmental organizations (NGOs) across the country are supported to bring development interventions. The idea of these programs is to ensure the creation of prosperous and content communities by initiating sustainable socio-economic and ecological development. With its holistic approach, the programme caters to the needs of the communities by providing necessary inputs on issues like promoting economic independence through skilling and livelihood opportunities, providing basic infrastructural development, and establishing a better ecosystem that promotes better living conditions. By focusing on developing human capital, management of natural resources, and infrastructure in poor and backward villages, it plans to bring about a socio-economic transformation in the lives of the rural community.

In the assessed HRD programme, Gramya Vikash Mancha (GVM) was the implementing partner in the Nalbari district of Assam. The programme covered a total of 7 villages in the district. The major focus areas for the intervention were Natural Resource Management (NRM), Skill Development & Livelihood Enhancement, Promotion of Education, and Healthcare & Hygiene. However, the extent of the work in each village was undertaken based on the need and varied from village to village.

## 1.2. Partner Organization-GVM

Gramya Vikash Mancha (GVM), established in 1999, is a non-profit organization working with the excluded sections of society in rural areas of Assam. The organization has been working with a mission “to empower the rural community, particularly the underprivileged and women to take control over social institutions, and thereby create a society where people can live with dignity. GVM is achieving its mission through creating opportunities for gainful self-employment, enhancing social justice, peace, progress, and a sense of brotherhood.”

**The Holistic Rural Development Project (HRDP) was initiated in 2017 in 7 villages of Nalbari district in Assam with the support of HDFC Bank Ltd.**

GVM aimed to accelerate the socio-economic growth of at least 2000 marginalized and underprivileged families by enhancing community action for the initiation of a sustainable development process. The project’s overall benefit reached the entire community of each targeted village but families and people from socio-economically excluded sections were identified and provided with opportunities to become direct beneficiaries of different project interventions.

Preference was given to women-headed families and families from the scheduled caste (SC) and scheduled tribe (ST) categories.

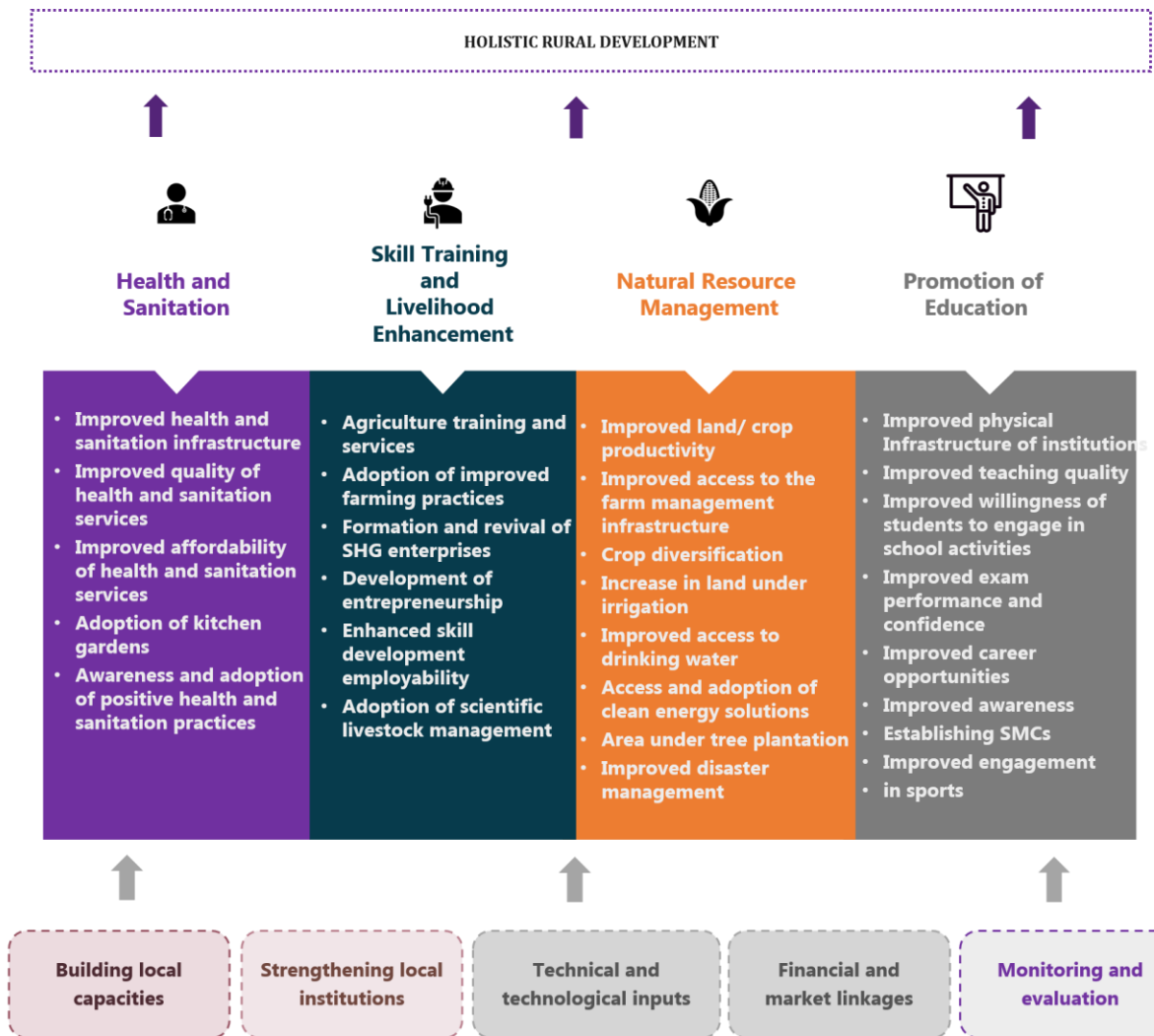
GVM's interventions in Nalbari, Assam covered the thematic areas of NRM, skill development and livelihood enhancement, healthcare and hygiene, and promotion of education. In agriculture, it worked on improving productivity, crop diversification, and promoting indigenous varieties of seeds. Seed banks were established to help farmers preserve their seeds, an agriculture expert visited plots for knowledge support, and an agriculture resource centre was established for underprivileged farmers to avail of various agricultural tools and machinery. Under skill and livelihood enhancement, different forms of support were provided to the community on an individual and community level. For instance, support was provided to SHGs and cooperatives to undertake business activities, weaving centres were set up for income generation, incubation centres, pickle-making assistance, and mushroom cultivation training was also implemented to support the community members financially. Some other interventions included sensitization programmes on health and hygiene, educational institutions development, and electrification facilities through infrastructure support. Further, GVM also created water user groups to manage the arsenic water treatment plant, thus ensuring sustainability and ownership by the community.

### 1.3. Purpose and objectives of the study

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

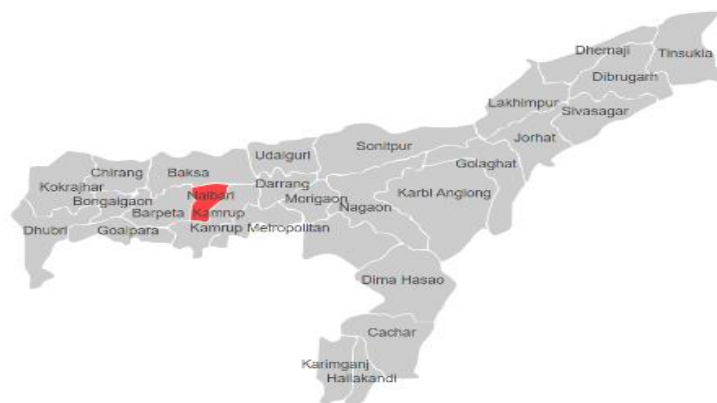
Considering the challenges that people of these villages face in the form of inadequate income, poor hygiene and sanitation, poor quality of education, and lack of basic infrastructure, the HRDP focused on promoting farm management and clean energy under NRM. Further, the programme also focused on agriculture training and support, SHG/Women development, skill training, livestock management, entrepreneurship development under **Skill training and Livelihood Enhancement**; educational institutions development and education support under **Promotion of Education**; health and sanitation, under **Healthcare and Hygiene**.

Figure 2: Conceptual framework of the implementation



The study was conducted in Assam, particularly in the Nalbari district. In the district, 7 villages were covered in the 4 blocks.

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, and Sustainability and Replicability**. The evaluation process was carried out in a consultative manner involving interactions with both HDFC bank and the GVM 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 effectiveness<sup>1</sup> of the program, the findings seek to establish the values of outcome indicators of all the thematic interventions. These findings are assessed against the outcome indicators finalized during the outcome harvesting stage. Further, through qualitative evidence, the evaluation tries to understand whether and how the program impacted the lives of the community members in the program areas. This was done through an analysis of program outcomes in light of certain variables identified in consultation with HDFC Bank. The findings from primary quantitative data have been substantiated by the information gathered from discussing with the communities/beneficiaries, teachers, students, entrepreneurs, and local institutions at the village level. Through primary data, the study has tried to understand if the programme has worked on strengthening the community's capacity to ensure sustainability, and whether any of the activities or strategies adopted have been/could be replicated.

### 2.1. Design and Methodology

A review of various program documents including HDFC'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 program team. The outcome mapping and result chain development were undertaken in consultation with the HDFC team. The exercise resulted in the identification of standardized key outcomes and indicators related to each of the program's thematic areas. Based on the standardized list of outcomes and outputs, the questionnaire for the state was developed.

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

## 2.2. Sample Size and Distribution

The sample size covered during the field is as follows:

**Table 3: Quantitative Sample Covered**

District	Health and Sanitation	Skill Training and Livelihood Enhancement	NRM	Promotion of Education	Total HHs
<b>Nalbari</b>	333	421	412	164	424
<b>Planned</b>	75	125	125	75	400

The total sample calculated for the study was 424. 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 GVK using random sampling. For the next step, the village-level sampling was done following the Probability Proportionate to Size (PPS) method. For the qualitative analysis, a total of 19 IDIs and FGDs were conducted out of 20 to assess the change that has happened over time.

**Table 4: Qualitative sample size covered**

Nalbari	FGDs				IDIs				
	<i>Business Enterprise</i>	<i>Teachers</i>	<i>Water User Group</i>	<i>Farmers</i>	<i>Paravet</i>	<i>Teacher</i>	<i>Students</i>	<i>Business Enterprise</i>	<i>Farmer</i>
Total	3	1	1	2	1	1	2	5	3
Planned	4	1	1	2	1	1	2	5	3

**Image 1: Training of field team held at Guwahati, Assam**



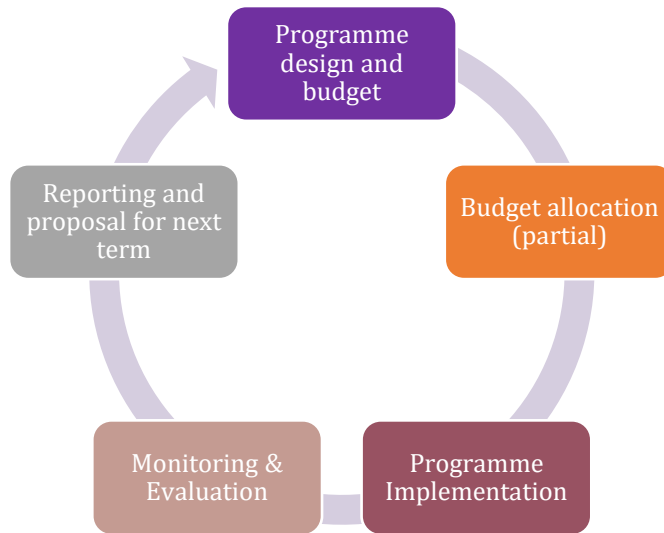
Since there was no baseline available for this evaluation, the recall method was used in the household survey to assess the change that has happened over time. For this purpose, the respondents were asked to recall the value of critical indicators at the start of the program. Teams of local enumerators,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

## 3. Program Review

### 3.1. Program Design and Implementation

The programme's interventions are decided on an annual basis, with an annual budget allocation based on the proposal by NEEDS to HDFC Bank. Based on our discussions with the partner team, a preliminary rapid rural appraisal (RRA) for each programme village was conducted in Nalbari to explore the problems and constraints in the villages. The methodology used for the RRA was transect walk, social mapping, and FGDs. The partner organization prepared an annual work plan wherein activities were proposed on a need basis, which emanated from the preliminary assessments. While this approach has helped in providing support to the immediate need of the communities, a systematic approach to resolving issues around such needs and a long-term vision and outcomes towards the thematic areas for HRDP remain desirable. Upon field observation, budget allocation was largely provided for infrastructure and material support, monetary support to SHG members and other members of the community to undertake business enterprises, and providing livestock. Painting and renovation work at schools and Anganwadi centres were also some other areas where the budget was allocated.

**Figure 4: Project Planning and implementation process**



Monitoring of the intervention by HDFC Bank is quite frequent and resources from different levels are deployed to monitor the activities frequently. Such monitoring visits focus on the output aspects such as infrastructure and access, along with the usage and community-level challenges.

Such monitoring visits focus on the output aspects such as infrastructure and access, along with the usage and community-level challenges.



## 3.2. Program Relevance

**NRM:** According to the 2011 Census, 89.28 % population of Nalbari district lives in rural areas of the district<sup>2</sup>. The primary occupation of the people of the district remains agriculture and agriculture contribute significantly to its economy. However, despite various government modern agricultural schemes, farmers are stuck with their traditional skills. Moreover, in Assam, rice has been the major food in the consumption basket but its productivity needs to increase to keep pace with the needs of the people and also to enhance farmers' income. The programme, therefore, focused on making the farmers adopt the practice of SRI which is a sustainable farming method that aims to increase rice yield. Mustard is another major crop grown in the region, thus, the need for training and promotion of mustard cultivation was felt to increase farmers' income. Further, programme villages did not have streetlights near their houses which created problems for accessibility, and therefore, solar-powered streetlights were installed for the ease of living of the community.

Image 2: Paddy cultivation using SRI



**Health and Sanitation:** Better health is vital for the socio-economic development of people. According to the District Nutrition Health Profile, the percentage of children (<5 years) stunted and wasted was found 27% each<sup>3</sup>. Moreover, 71% were even anaemic. Anaemia was also found high in both pregnant and non-pregnant women. Moreover, the health structures like the ICDS in Nalbari lacked proper infrastructure which made them inaccessible to people. Further, people of Assam are consuming water that contains fluoride and arsenic and according to reports, Nalbari is the district where **most of people are affected by arsenic which is extremely poisonous and leads to illnesses**. The programme, therefore, made efforts to improve the health and sanitation facilities and undertook interventions to improve accessibility and availability of quality health and sanitation facilities like health sensitization sessions, installation of water ATM, and renovation of ICDS.

Image 3: Arsenic removal water plant



<sup>2</sup> <https://www.census2011.co.in/census/district/163-nalbari.html>

<sup>3</sup> <https://www.niti.gov.in/sites/default/files/2022-06/Nalbari-Assam.pdf>

**Skill and Livelihood:** The project has also attempted to influence the status of women empowerment in the villages and ensure women with sustained sources of income due to the poor economic status women hold in their families. Therefore, women SHG members were supported with microenterprises to promote entrepreneurship and livelihood diversification among them. Support was also provided on an individual level to certain households, especially those hit by COVID-19.

Image 4: Weaving loom set up under the project



Furthermore, since poultry, piggery, fishery, dairy, and goat rearing are the major allied agricultural activities in the district, 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.

Farmers of the region use backward agricultural practices which leads to low crop productivity. GVM recognized the potential the villages have to adopt sustainable agricultural practices and high-value cropping. It, therefore, worked on promoting agricultural skill sets through training and demonstrations.

**Educational Institutions Development:** Assam ranks fifth among all the states in the country with an average literacy rate of 86%<sup>4</sup>. However, in Nalbari, where the programme was implemented, the average literacy rate is 78.63%<sup>5</sup>, below the state average. Schools and Anganwadi centres lack basic infrastructure facilities- like proper walls and roofs, toilets, and drinking water, which have a crucial role to play in ensuring quality education. Moreover, children do not have opportunities to enhance their skills mainly because they live in rural areas and come from economically poor households.

Image 5: Cycle stand constructed at a model school in Karia



Through HRDP, model schools were created where 2 schools were renovated, and provided with water and sanitation infrastructure, play materials, and computers for improving learning outcomes. GVM also started remedial coaching classes for the assistance of high school students and provided fellowship support to 10<sup>th</sup>-class students.

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

<sup>5</sup> <https://www.indiastatdistricts.com/assam/nalbari-district>

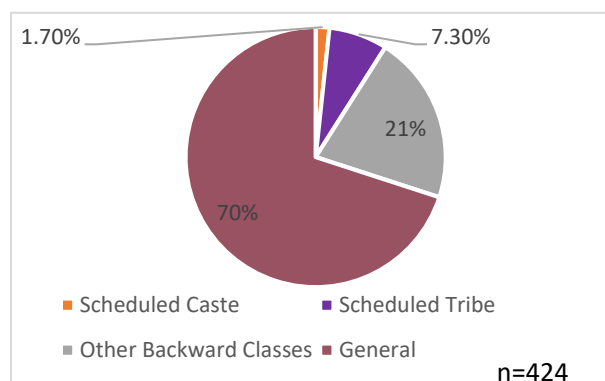
## 4. Study Findings

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

### 4.1. Demographic profile

This section provides the demographic profile of the respondents<sup>6</sup> covered in the sampled program villages. In Assam, the assessment was undertaken in the 4 blocks of the Nalbari district.

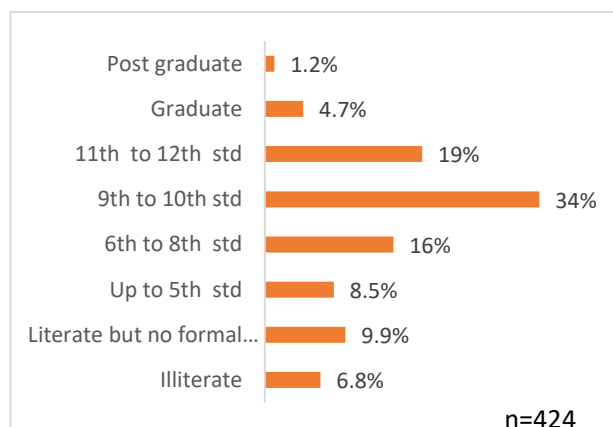
**Figure 5: Social profile of the respondents**



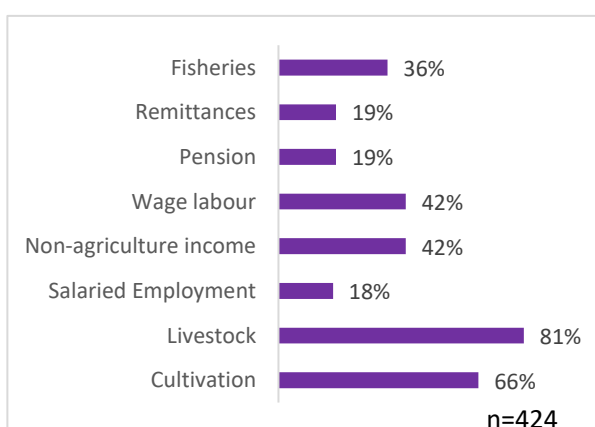
The sample was representative of both male (30%) and female (70%) and comprised of the marginalized sections of the society (Ref. fig. 5) living mainly in kutcha (39%) and semi-pucca houses (28%).

The level of illiteracy was found low as only about 7% of the sample size was illiterate and 34% of the sample had completed high school (ref. fig. 6). Moreover, agriculture (66%) and livestock (81%) were reported as the primary source of livelihood (ref. fig. 7).

**Figure 6: Literacy level of the respondents**



**Figure 7: Sources of Income**



Firewood remains the main source of cooking (56%) but 31% of the households also reported using LPG. Further, the main source of drinking water for the community was – tubewell/ borehole (91%).

<sup>6</sup> The respondents are the beneficiaries of various activities under the interventions that were covered under the household survey (sample size= 424)

## 4.2. Natural Resource Management

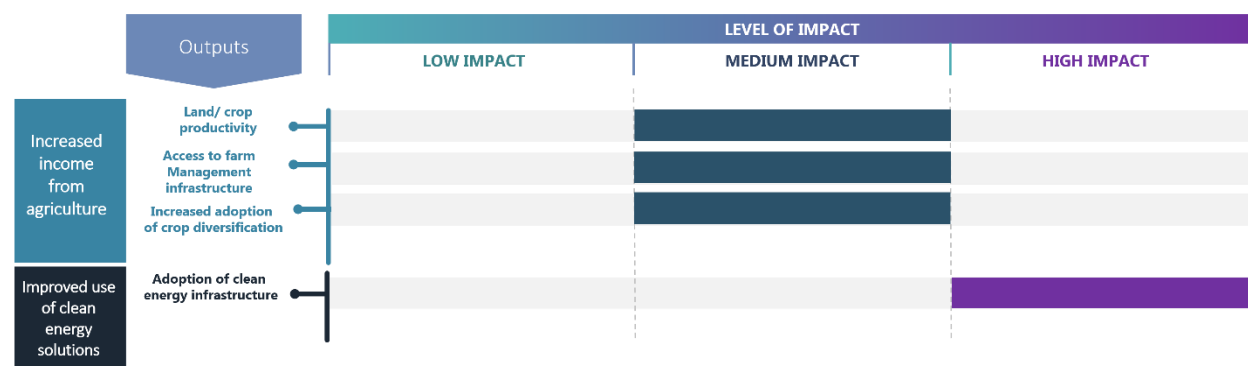
**Table 5: Activities under NRM in Assam**

Activity Category	Activities
Farm Management	Construction of vermicompost unit, horticulture, promotion of improved practices in paddy and mustard cultivation, paddy seedlings factory, seed bank, and agriculture resource centre.
Clean Energy	Solar lighting system for village street and solar lamps

### 4.2.1. Effectiveness and Impact

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

**Figure 8: An overview of project effectiveness and impact in NRM<sup>7</sup>**



### Income from agriculture

In the survey sample, the benefits from agricultural activities were availed by about 33% of the total respondents. The **interventions in farm management like organic manure (76%), training/demonstration of SRI cultivation method (75%), pesticides/fertilizers (55%), and crop diversification (37%) have been most availed and practiced** among all the agricultural activities conducted under the intervention. However, although the programme stressed spreading the importance of vermi pits by constructing 30 pits in total, its adoption has been very low (7%). Interactions with farmers show that they usually prefer buying organic manure and a few have their vermi pits through support from other organizations.

As can be seen from the figure below, there has been an **increase in the net median<sup>8</sup> income by about 54%<sup>9</sup> and an increase in the gross<sup>10</sup> median income by 43%<sup>11</sup>** which is a result of a

<sup>7</sup> 100%-70% - High impact; 40%-70%- Medium impact, <40% - Low impact

<sup>8</sup> Net income was taken deducting the input cost from the total income from production

<sup>9</sup> The increase reported is statistically significant at 95% confidence interval.

<sup>10</sup> Gross income is the total income earned by the farmers without subtracting the input cost

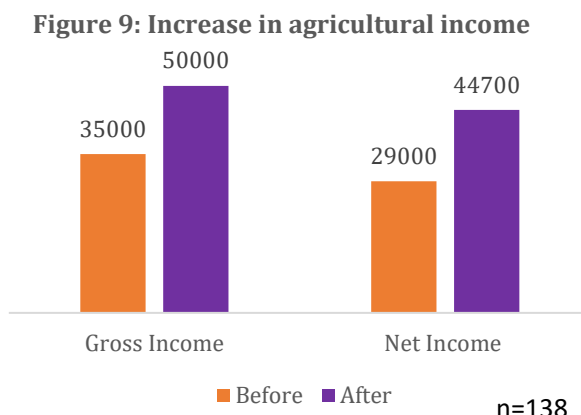
<sup>11</sup> The increase reported is statistically significant at 95% confidence interval.



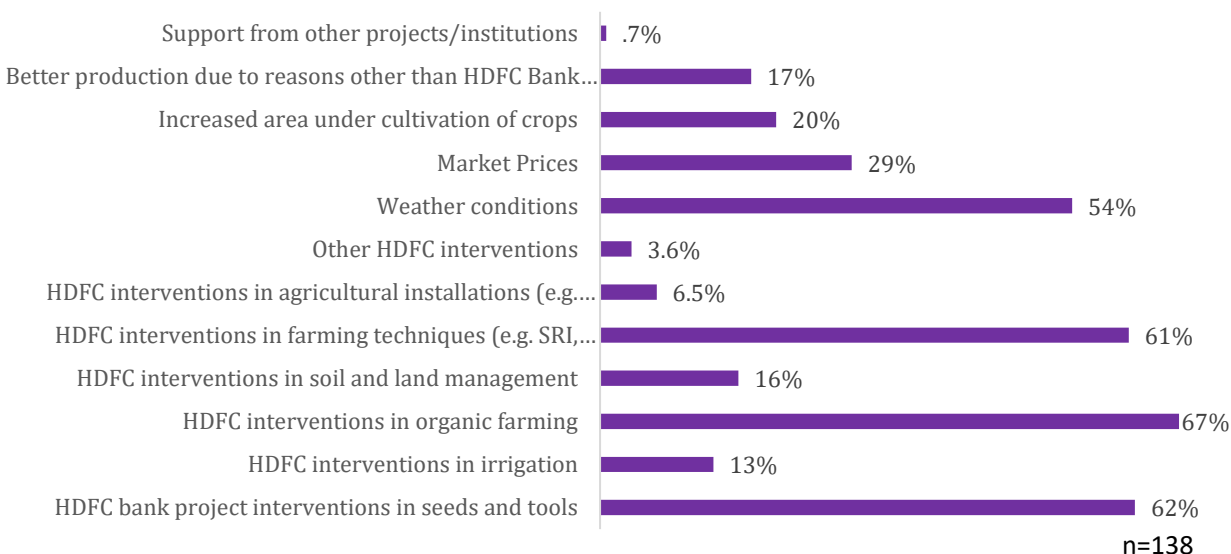
reduction in indirect expenses (ref. figure 9). To support this claim, **the input price calculated shows a 23% decrease (₹6500 to ₹5000).**

Further, 78% of farmers also reported experiencing a decrease in input cost for reasons like HDFC interventions in farming techniques (68%), intervention in organic farming (68%), and intervention in seeds and tools (59%). Farmers are now using fewer seeds and fertilizers to produce more quantity of crops.

**99% of the farmers surveyed reported a positive income change from agriculture since the project started.** The reasons for the increase in net income can be credited to the impact of various interventions around income-generating activities as can be understood from the figure below. Moreover, **when looking at specific interventions, training/demonstration of the SRI cultivation method (61%), and organic farming (67%) were reported as the main causes (ref. fig.10).**



**Figure 10: Reasons reported for the increase in income (n=138)**



The project's objective was to increase the volume of crop production and income of existing farmers. Since rice is a major crop in the area, HRDP promoted rice production through SRI. Mustard production was also promoted. Survey findings suggest that **97% of the farmers producing rice and 95% of farmers producing mustard reported an increase in production after the project.** The average production of paddy increased from **2400 kg to 3200 kg** and mustard increased from **300 kg to 360 kg**. Qualitative findings also substantiate these claims as the farmers expressed their satisfaction with the methods taught and their outcomes.

However, **only 37% of the beneficiaries have adopted crop diversification practices supported by the HDFC programme but those who have adopted are satisfied with the same** and reported income increase (69%) as one of the benefits experienced.

Respondents reported **an increase in the productivity of the crops that were supported under the interventions of the HDFC programme**. The crop-wise reasons for the increase are listed below in the **figure and were reported by the farmers as per their own understanding**. Since paddy is the main crop cultivated in the area, intervention in seeds and tools, organic farming, weather conditions, and farming techniques have been largely responsible for an increase in farmers' income. However, as found from qualitative analysis, the machinery support and irrigation facility for the farmers of Barajol village has been very helpful in the production of paddy and other crops. The irrigation support provided has helped the farmers in cutting down fuel expenses. The paddy seedling factory has been of great advantage to the beneficiaries as it helped them grow paddy even during the winter season and increase production.

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

<b>Crop</b> <b>Intervention</b>	Rice	Mustard	Potato
HDFC bank project interventions in seeds and tools	68%	73%	60%
HDFC interventions in organic farming	68%	68%	75%
HDFC interventions in farming techniques (e.g. SRI, creeper farming)	39%	39%	35%
HDFC interventions in agricultural installations (e.g. grain bank, seed bank, nursery)	24%	21%	50%
Weather	46%	54%	70%

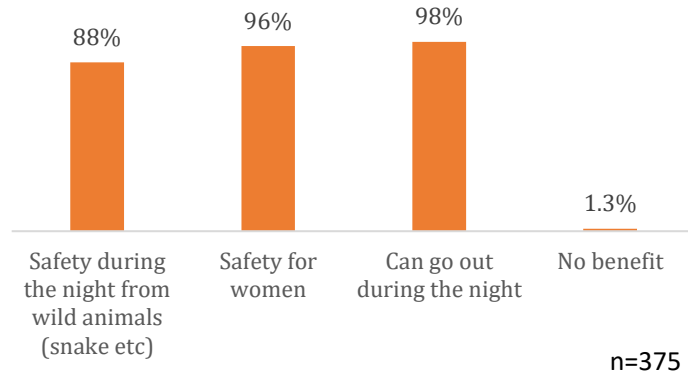
**Therefore, the findings suggest that the median productivity for 3 major crops (paddy, mustard, and potato) has increased from 1277kg/acre to 1573 kg/acre (23% increase).**



## Use of clean energy solutions

The villages of the state face the challenge of having a constant electricity supply, especially during the rainy season, and therefore, the programme installed solar street lights. 92% of the total respondents who were supported under clean energy reported having solar streetlights near their households now as compared to 6.7% before the programme. Of this 92%, **95% reported the street lights being operational.**

**Figure 12: Perceived benefits of solar street lights (n=375)**



These lights have brought benefits for village people in the form of providing safety during the night from wild animals, safety for women, and ease in going out during the night.

## 4.2.2. Case Study



### Seed Bank

In order to preserve the traditional variety of seeds of crops like paddy, black gram, sesame, etc., the project supported the farmers of Raitkuchi village by constructing a structure to be used as a seed bank and informed them about the quantity of seed that can be stored. The seed bank is looked after by a committee formed by the programme that looks after the management of the storage facility and maintains records of the quantity of seeds kept for storage.

As per the rules, one farmer can store 4 variety of seeds of a total size of 10 kg (free of cost) for a maximum of 5 months so they can use them for plantations. Currently about 25 people are storing seeds, however, more farmers want to avail this facility as the bank provides respite during floods and saves the seeds from damage and therefore prevents income loss.

### 4.3. Skill Training and Livelihood Enhancement

To help increase the income of the household, it is important to have pertinent skills. Under the HRD program, various skill development training and support to start their enterprises or improve their farming practices were provided for women, youth, and farmers.

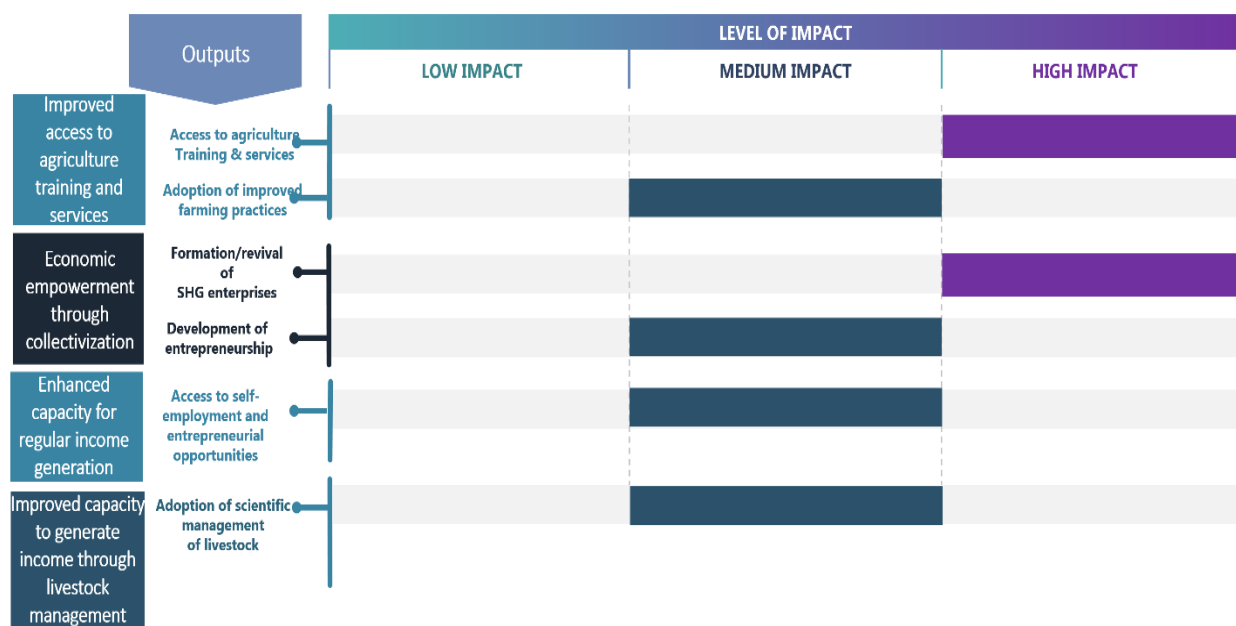
**Table 6: Activities under skill training and livelihood enhancement in (enter state)**

Activity Category	Activities
Agriculture Training and Support	Formation of association, farmer training
SHG-Based Women Empowerment	Entrepreneurship Development Program for SHGs (revolving fund), training on bookkeeping, production of quality offsprings of poultry, weaving centre, installation of tools and machinery, support for the promotion of fisheries, piggery, poultry, mushroom production unit, rice and oil processing unit, banana chips making machinery, linkages with bank
Livestock Management	Vaccination, paravet
Entrepreneurship Development	Skill training, rice and oil processing unit, incubator centre, pickle-making support, installation of milk processing tools and machinery, linkages with banks

#### 4.3.1. Effectiveness and Impact

Under Skill training and livelihood enhancement, the project was 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 financial support. The figure below is a pictorial representation of the project’s impact on skill training and livelihood enhancement.

**Figure 13: An overview of project effectiveness and impact and skill training and livelihood enhancement**



### Agriculture training and services

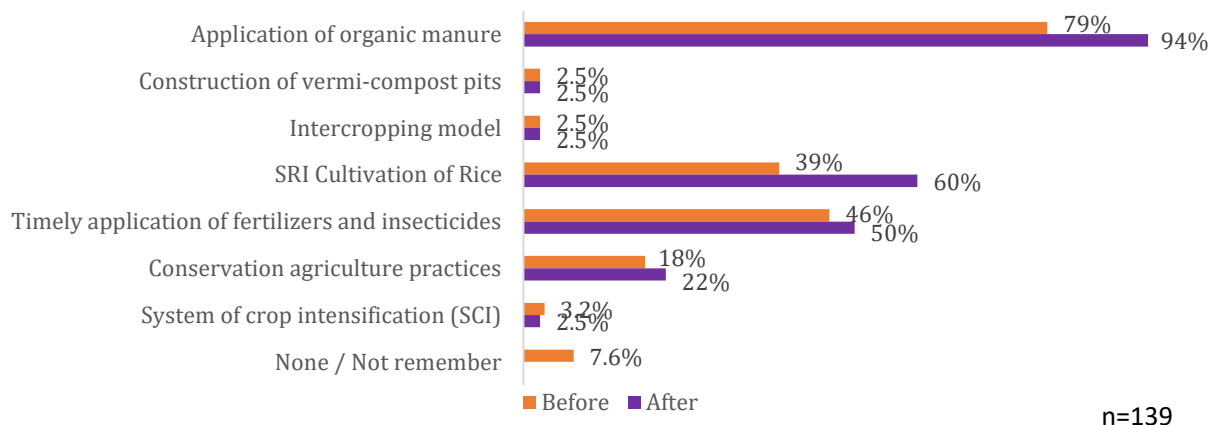
Of the total sample covered, 37% of the respondents received agriculture training and support. **Almost all of the households have benefited from training in agriculture practices (99%).**

**HDFC bank training has made the farmers aware of sustainable farming practices like the application of organic manure (95%), SRI cultivation for rice (56%), and timely application of fertilizers and insecticides (59%).** The programme constructed vermi compost units with the help of convergence with the government. An awareness cum training programme was conducted for the farmers regarding the benefits and preparation of vermi composts. **However, awareness regarding the construction of vermi-pits (5%) was found low in the survey.**

Various training sessions were organized to build/enhance farmers' skills. **90% of the respondents received training on natural farming** and 46% of them found it very useful while the other 53% found it useful. Farmers' satisfaction with the training was also highlighted during some of the qualitative discussions.

**The training has been useful in improving their capacity to increase productivity (89%), awareness of sustainable farming practices (44%), reducing crop loss (40%), and reducing input cost (51%).** Through this training, farmers learned about the application of organic manure (96%), SRI (67%), timely application of fertilizer and insecticide (51%), and construction of vermi pits (3.8%)

Figure 14: Respondents practising different practices



Moreover, there has been an improvement in the practices done before vis a vis the practices adopted after the intervention, as can be seen from the figure above (ref fig. 14). **Those currently practicing farming techniques have noticed improvements in the form of an increase in productivity (77%), an increase in income (89%), a reduction in input cost (48%), and a reduction in crop loss (42%).** Benefits in the form of improved soil health (23%) and improved pest management (28%) were observed by relatively fewer farmers (ref. fig. 16).

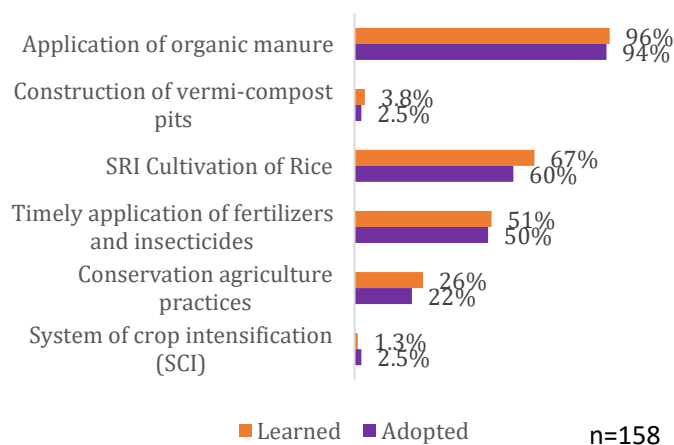
Since about 70% of the community is involved and dependent on paddy cultivation as a source of income, farmers were provided training through agricultural experts to promote the adoption of a

scientific approach to cultivation and move away from traditional methods. A qualitative discussion with a paddy farmer who had adopted SRI practice highlighted his contentment with the same as now fewer saplings were used and the process of weeding became easier. Moreover, there was an increase in production and therefore his income as his production increased from 600 kg on 1 bigha land to almost 900 kg. Similarly, training was provided to promote the scientific method of cultivation amongst turmeric and mustard farmers, and follow-ups were made by the agriculture expert.

Moreover, the team promoted a **seedling factory farmers' group** in Barajol village. The programme formed a farmers' group and supported it with machineries like a paddy transplanter, mechanized weeder, paddy harvester, paddy reaper, and solar power irrigation facility. The objective of the seedling factory was to promote and adopt a mechanized way of farming in paddy cultivation and provide the seedling to the farmers at a reasonable price. Demonstrations were given in the paddy field by the proprietor and the machines were handed over to the farmer group to be used at a minimal rent. Findings show that **this has helped farmers in saving time, input, and labour costs**. They can now cover more land which has increased their incomes.

**Data shows that the median annual income increased due to the skills learned to ₹20,000.** Moreover, as found out during the survey, some farmer groups have also been established in the intervened villages. **32% of the respondents highlighted that they were members of a farmer**

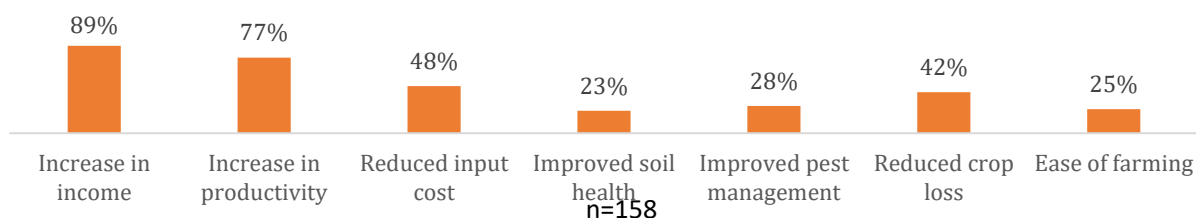
**Figure 15: Agriculture practices learned and adopted through HDFC Bank training**



**group/association**, of which 35% said that the group was established under the HRDP project. The group has reported receiving support from the programme mainly in the form of mobilization for group formation (47%), bank linkages (84%), group training (82%), registration of group (41%), market linkages (39%), and technological support (29%). An additional source of income (88%), reduced risk in farming (55%), market information and linkages (45%), and easy availability of inputs (39%) was highlighted as the major benefits of being project supported group

member. However, the figures for other forms of benefits like availability of information (16%), and improved input efficiency (37%) were reported as relatively low.

**Figure 16: Perceived improvements due to the adoption of agricultural practices**

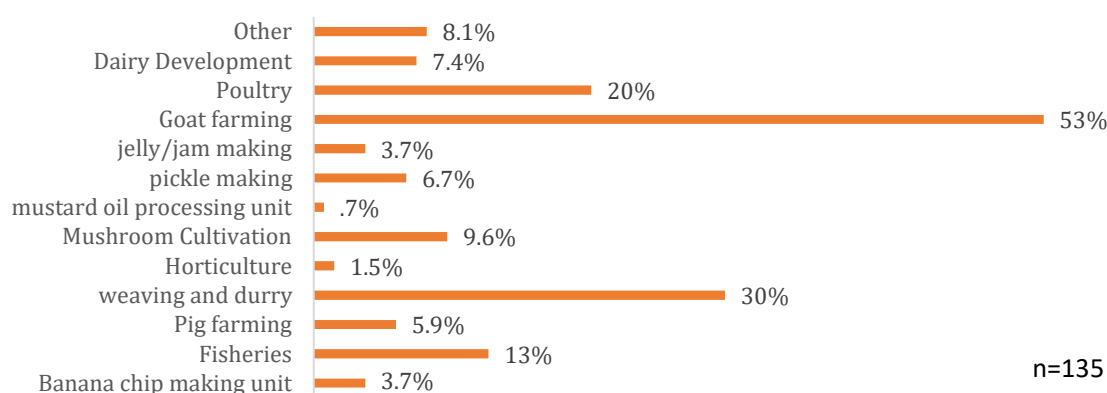


## Economic Empowerment through collectivization

About 63% of the surveyed respondents were SHG members who received project support, especially in areas including **establishing/ expansion of SHG enterprises (49%), training (99%), and establishing bank linkages (84%).**

The effort of GVM as part of the project was to provide better skills and abilities to the poor and marginalized women of the SHGs in the area of employment and income-generating activity. Training programmes were organized to provide necessary knowledge support for income-generating activities like mushroom cultivation, livestock and poultry management, weaving, etc. Moreover, group-based support to create additional income sources was provided on a revolving mode and therefore, the groups received a sum of ₹50,000 as a revolving grant for internal lending among members for starting income-generating activities.

**Figure 17: Enterprise/Business Activity of SHGs supported by HDFC bank project**



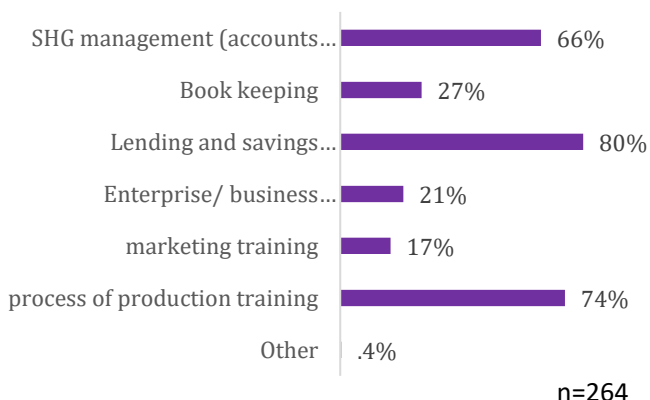
**Mostly all members are continuing with the business activity with just 1.5% of the respondents receiving support under enterprise establishment not being involved in any business activity after the project for reasons like lack of time.** Moreover, most of the business activities are being undertaken on an individual level with a few exceptions like mushroom cultivation and weaving.

With regard to training for SHG members, data suggests that the project provided support in SHG management (66%), lending and savings management (80%), and process of production training (74%). **The support received for enterprise management (21%), bookkeeping (27%) and marketing (17%) was low (ref. fig. 18).** This was even highlighted in the qualitative discussions. Beneficiaries of enterprises like weaving, and banana chips units reported challenges in selling their products for a better price. They did not know how to sell and where to sell their products. Their knowledge of exhibitions was also found minimal. The training received was found useful by the beneficiaries as it helped them in increasing income from business (87%), awareness of financial



management (58%), confidence (84%), skills to manage business activities (40%), and reduced income losses from business activity (45%).

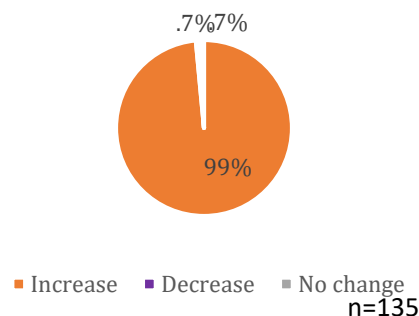
**Figure 18: SHG trainings received as part of the project**



However, in certain cases, the SHG enterprise complained about the process of production training only being received by 2 members of the groups who then taught others. This transfer of knowledge has not been of much help and women want better training. For example, women undertaking weaving wanted to be trained in designing and handling the looms efficiently as they are different from their traditional looms.

**More than 90% of SHG beneficiaries believe that being an SHG member has helped them in improving income generation capacity (91%), personal savings (90%), and confidence building (94%)** indicating the crucial role these institutions play in facilitating women empowerment. 82% also stated getting a loan with less interest amount as one of the other benefits of being an SHG member. Respondents have taken internal loans, most of which were used to start their businesses (84%). **Moreover, where 69% of the respondents' group had savings before the inception of the project, all SHG groups are undertaking saving now.** 99% even reported that their savings have increased since the project started mainly from improved saving and repayment behaviour of members and income from the business activities undertaken by the members.

**Figure 19: Perceived change in income through SHG enterprises**



As indicated in figure 19, there has been a positive change in the income from SHG enterprises as about **99% of the respondents noticed an increase in their income.** Therefore, **the median personal monthly income from SHG enterprises increased by 66.6%<sup>12</sup> (from ₹3000 to ₹5000).** Moreover, in certain cases, the beneficiaries are undertaking their micro enterprises (mainly livestock rearing/fishery) with the help of the sum provided which has helped them to earn some additional income.

### Skill and Entrepreneurship Development

The programme had a major focus on entrepreneurship development. It supported a pickle processing unit with funds and machinery support to start operations after COVID-19. Similarly, similar support in the form of machines was provided to a member of a livestock trust. A refrigerator,

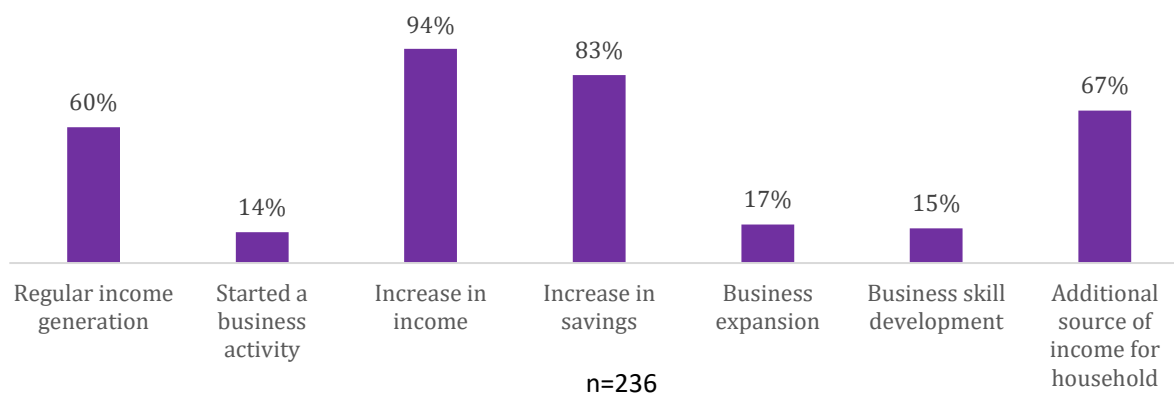
<sup>12</sup> The increase reported is statistically significant at 95% confidence interval.

milking machine, paneer making machine was made available along with feed for poultry birds, fishes, and cows. The mechanical support provided has helped in increasing the scale of production and income.

Other examples would be the provision of an egg incubator and setting up an oil and rice processing unit along with proper training on its operation. Quantitative findings show that community members received support in the form of capacity-building training on various trades (99%) and support for enterprise development (40%). Those supported for enterprise development received assistance in linkages with banks (67%), training for business management (88%), and information regarding production techniques (56%).

Basis qualitative analysis, beneficiaries of these enterprises seemed satisfied with the intervention and the result it has given. However, they do wish to receive more support for the expansion of their businesses.

**Figure 20: Perceived benefits of enterprise development support**



**A 50% increase<sup>13</sup> from ₹4000 to ₹6000 in monthly 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. **In the case of enterprise owners, more than 90% of respondents reported an increase in income while 60% believe that the enterprise has led to consistent income generation since project inception** (ref. fig. 20).

### Livestock Management

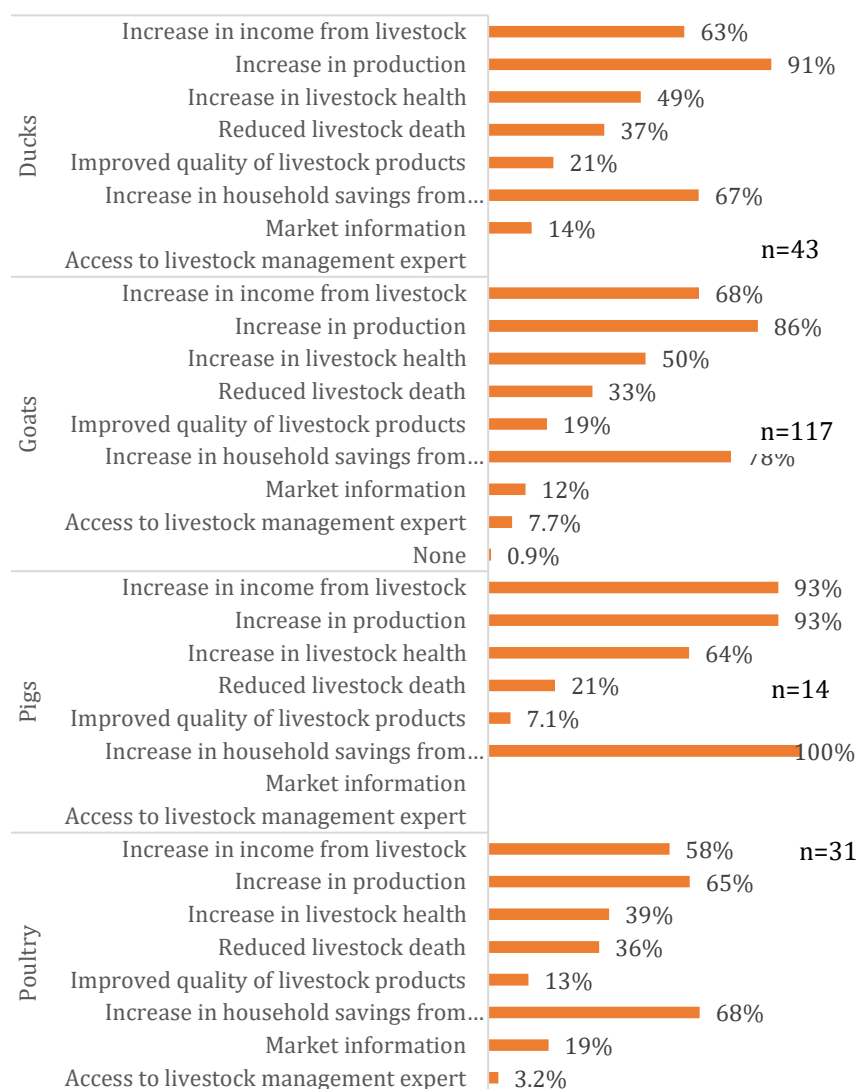
The programme promoted poultry farming in the community and farmers were identified and provided training. Farmers also received ducklings/chicks and 50kg of starter feed under the intervention. Farmers engaged in poultry farming prepared sheds following the guidance received from the Veterinary Department. Further, the revolving fund provided to SHGs was also used by a few members to undertake livestock and poultry management.

As per the findings, 52% of the respondents received benefits under livestock management. Beneficiaries received services like fodder development support, vaccination camps, livestock

<sup>13</sup> The increase reported is statistically significant at 95% confidence interval.

management training, livestock health services, and household vaccination services. This was also highlighted in the interviews where the beneficiaries told about receiving training to look after their livestock. The programme trained a paravet for the community who looked after the health of cows and goats. Basis qualitative analysis, the trained paravet continues to look after the needs of the community and the people seem satisfied with his services.

**Figure 21: Perceived primary benefits of livestock interventions**



The information provided to the beneficiaries and the intervention, as a whole, has resulted in some benefits for a proportion of the community. As per our analysis, an increase in income from the livestock, an increase in production, an increase in livestock health, and an increase in household savings from livestock were reported as some of the main benefits gained through support received.

Moreover, as found in the qualitative discussions, most of the farmers are continuing with the poultry/ goater/ piggy, etc. even after the end of the project. Although there were a few beneficiaries who lost their livestock to floods and diseases in the initial phase of the programme, they continued with livestock rearing with

their own money or with the sum (₹50,000 revolving funds) provided to their groups under the programme.

Beneficiaries reported that the intervention was effective in providing them with an alternate source of income and nutrition, however, some didn't agree with the same as most of their ducks/chicks died. Nevertheless, the community still reported a **50% increase<sup>14</sup> in median monthly income**

<sup>14</sup> The increase reported is statistically significant at 95% confidence interval.

**from livestock as their income increased from ₹4000 (before the project) to ₹6000 (after).** As per qualitative discussions, ducks, chickens and goats were sold for around ₹500, ₹300, ₹4000 respectively (per unit).

#### 4.3.2. Case Study 1

##### Weaving Centre

Gamosa, a traditional handloom cloth which has a white background and red stripes is a widely consumed product in Assam. It displays distinguishing and innovative weaving skills of the indigenous Assamese women who pass on the traditional skills to their daughters in the villages. The women SHG members of the intervention villages were initially practicing weaving at their homes, using their own money and raw materials but the project supported the women of Barmurikona village and brought women from 3 different SHGs together to do the weaving collectively at one weaving centre with a greater number of looms. 2 women from the group were trained on the skill who later transferred the knowledge to other members of the group. However, since weaving skills are passed on through generations as traditional knowledge practices, most women already had the knowledge.

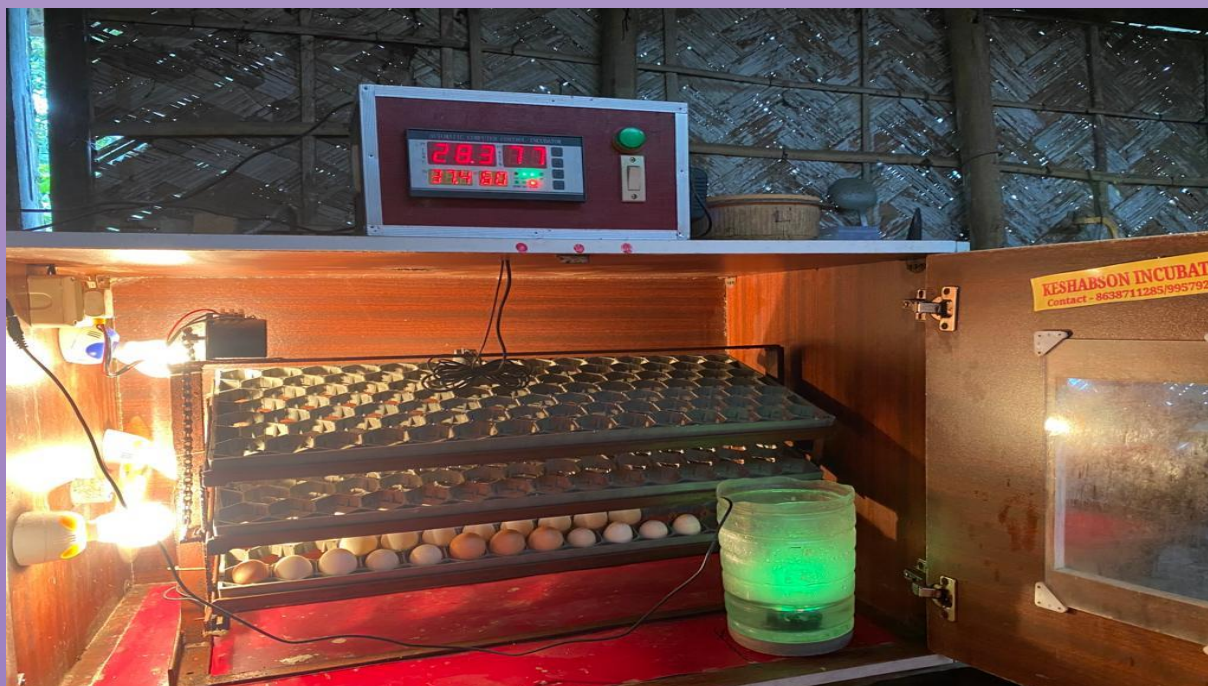
Women have divided timings to use the looms and have continued working even after the end of the project. The women sell their products locally and get a monthly income of ₹5000 which is divided amongst the group members. They are pleased with the additional earnings made as it has made them self-sufficient enough to buy things they like. Rani smiled and with slight twinkle in her eye said that “we can now buy clothes and cosmetics we like with our money.”

### 4.3.3. Case Study 2

#### Egg Incubation Centres - The Rise of Agribusiness in Assam

Rural poultry farming is considered a profitable enterprise in rural areas of India due to the sale of eggs and meat. Kunjalata Talukdar from Barmurikona was involved in chicken farming for 3 years but in order to boost her income further, she was provided with an egg incubator to enhance the productivity and business. She had received technical training on how to put eggs, how to check eggs, how to maintain the incubator etc.. which she found extremely helpful. Talukdar and other incubator farmers supported under the programme were linked with poultry farms to collect eggs on a regular basis.

Each incubator has a capacity of 300 eggs and it takes 21 days for the eggs to mature. After the support, Kunjalata experienced change in her income which rose from ₹15000 to ₹19000 per annum. She collects her product batch wise from the incubator and sells it in the local market but because she has been doing so for a while now, she has made a strong customer base who directly come to his house to make their purchases. She buys 1 pair for ₹30 and sells 1 chick for ₹30. Moreover, if the bird is of bigger size, she sells it for a much higher price.





## 4.4. Health and Sanitation

Better health is important for a healthy and long life. Raising awareness around good health practices and health issues seemed imperative in the project villages and therefore, various awareness generation sessions were organized. However, the project did not have much intervention for improving sanitation as most of the households in the programme villages had individual household toilets.

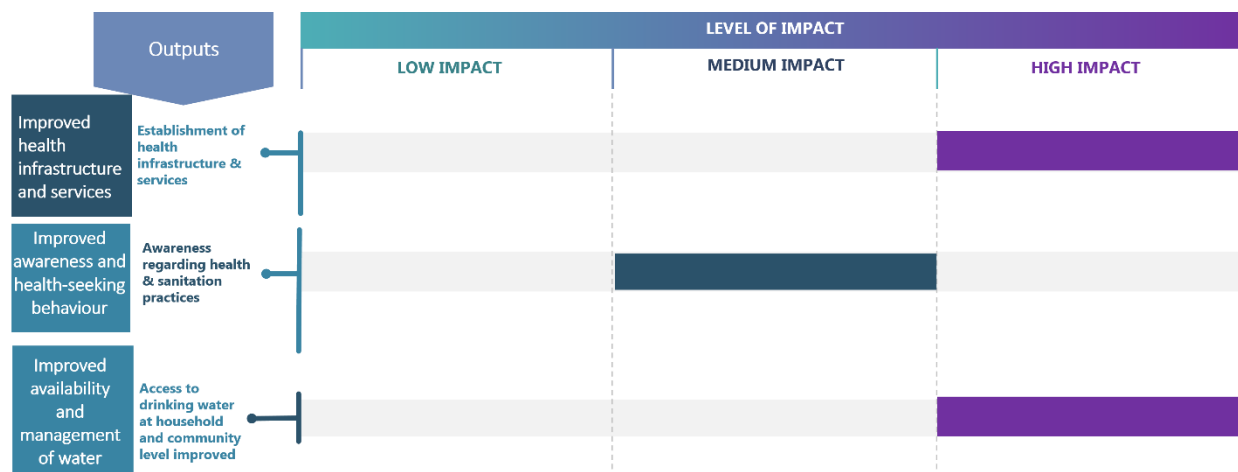
**Table 7: Activities under health and sanitation in Assam**

Activity Category	Activities
Health	Sensitization and interface program on health issues, support to promote health institutions (construction and renovation)
Water Management - Drinking	Well-functioning Arsenic Treatment Plant, Renovation and upgradation of community-based drinking water source and installation of community filter

### 4.4.1. Effectiveness and Impact

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

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



#### Health infrastructure and services

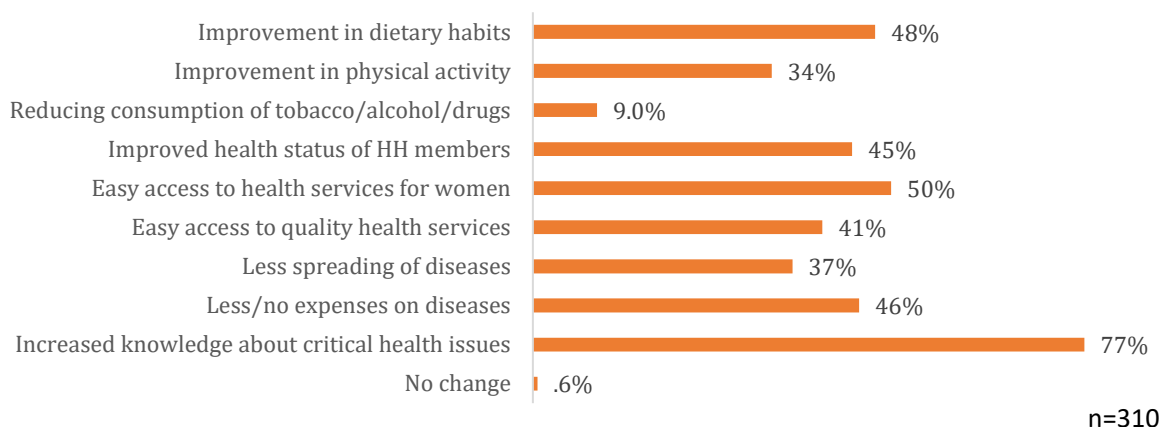
The programme had a component of creating awareness around health to increase health-seeking behaviour among the community and prevent the spread of harmful diseases. Of the total respondents interviewed, 73% of the households had availed the health services under the programme. A **training programme on nutrition management** for the vulnerable population-children, adolescents, and pregnant and lactating mothers was organized and street plays were conducted to raise awareness of health issues and substance abuse. Moreover, the implementing partner worked along with the government to inform people about preventive and curative measures



for various diseases. Local health institutions/ Anganwadi centres were also renovated in villages for better health services and delivery.

The respondents surveyed observed changes in lifestyle after attending the awareness sessions like improvement in dietary habits, physical activity, the improved health status of household members, less expenditure on diseases, etc. (ref. fig. 23).

**Figure 23: Perceived life changes due to attending sensitization sessions**



### Awareness and health seeking behaviour

The programme supported sensitization sessions that helped in raising awareness on solid and liquid waste management, nutrition management, and cleanliness practices one must practice daily. **98% reported washing hands using soap after using toilets as a cleanliness practice to be followed daily.** However, despite all households having individual household toilets, only 68% of the respondents stated using toilets instead of open defecation as a daily practice to be followed. The interactions with the community give the notion of a gradual change in the community in terms of health and hygiene practices. Better ICDS infrastructure has also helped more women and children availing the same. **HDFC Bank awareness sessions (46%) and friends and relatives (50%) have been the primary sources from which the community has gained knowledge.** However, these figures are still relatively low and only less than half of the respondents reported HDFC bank being their source of information.

**Moreover, although figures for solid waste management were also low, the number of people dumping solid waste in closed pits has increased from 20% to 48%.**

**When it came to knowledge about the best methods for solid and liquid waste management, the figures reported were relatively low.** 50% of the respondents stated dumping solid waste in a closed pit after segregation is the best way for solid waste disposal. The other most highly reported method was collecting and burning it in open (53%).

**Figure 24: Health and sanitation practices learned through different sources**



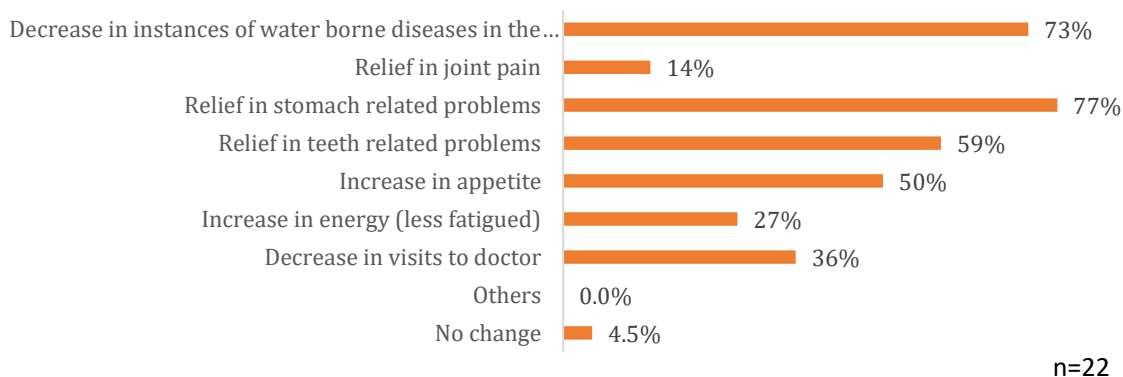
The best way for liquid waste management as reported by the beneficiaries was releasing liquid waste in soak pits (65%), releasing liquid waste in water bodies (20%), and releasing liquid waste in open areas (34%). Here as well, the main sources of information regarding these methods have been the camps and the awareness campaigns under the programme.

### Water Management- Drinking Water

Since groundwater in most districts of Assam contains arsenic and iron, arsenic and iron removal plants were set up to cater to the demand for safe drinking water in No. 3 Balitara and Barmurikona villages and their nearby villages. Moreover, running water facilities were made available to provide water to the community during puja or other events. As per the survey, **41% of the respondents under drinking water management reported benefiting from the water treatment plants and 63% benefited from community water tanks. Prior to the programme, the main source of drinking water remained tubewell/borehole (91%) which was causing gastric issues in the community.**

Findings show that 43% of the respondents have observed a change in the source of drinking water after the project. Of this, 82% of the respondents have been consuming water from HDFC bank-supported plants for more than 2 years and are extremely satisfied with the intervention. Field observation attests to the fact that the plants are being managed well and are being used by the community on a daily basis. This change in the source of drinking water has brought a change in household health with relief in stomach related problems, a decrease in instances of water-borne diseases, an increase in appetite, prevention of cancer, etc. (ref. fig. 25).

**Figure 25: Changes observed in health due to change in the source of drinking water**



#### 4.4.2. Case Study

##### **Water ATM - Bringing Civil Society together to face the threat of Arsenic Poisoning**

Clean drinking water is extremely crucial for health. However, as per the data released by the Government of Assam, many districts in Assam consume arsenic rich water. Gramya Vikas Mancha, under the HRDP initiative, installed a water ATM in the village of Barmurikona to supply clean water to the community.

Now Jayonto, just by tapping a prepaid card on the screen of the water-dispensing machine, is able to get 20 litres of water in just ₹7. He has seen differences in his family’s health after consuming this water and does not wish to go back to drinking water from the tube well/pond. Just like Jayonto, the water ATM meets the demands of some 300 other people in a day. This even includes people from adjoining villages.

Not just this, water can also get delivered at a cost of ₹20 for people who have difficulty in transporting it and who live further away. The programme has an assigned delivery man who undertakes the task of delivering water to the doorsteps.

A distinguishing feature about the ATM is management by the community. A water user group consisting of community members was established to look after the issues pertaining to the distribution of water. Moreover, the ATM has Sashanka Bezbaruah as its caretaker who was trained by Drinkwell, a technology platform that installed the ATM, and manages the day to day functioning of the same. He is responsible for filling the water tanks and washing out the pollutants gathered by the machine.

The ATM has been functioning well since the time of its installation and is greatly appreciated by the community. However, people face some problems during summers as the demand for water increases but the process of filtration takes time and therefore it is unable to cater to the needs of all.

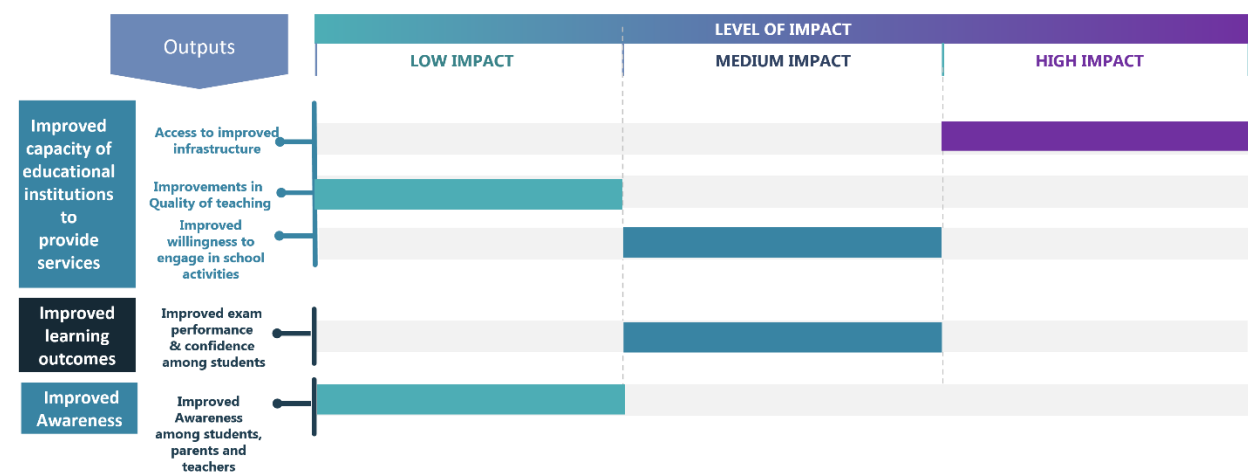
## 4.5. Promotion of Education

**Table 8: Activities under education in Assam**

Activity Category	Activities
Educational Institutions Development	Promotion of model school, running water facility/ kitchen garden/ library/ cycle stand/ sanitation and infrastructure repairing, Renovation of Anganwadis
Education Support	Remedial Classes in all project villages, non-residential camps, fellowship support to deprived children

### 4.5.1. Effectiveness and Impact

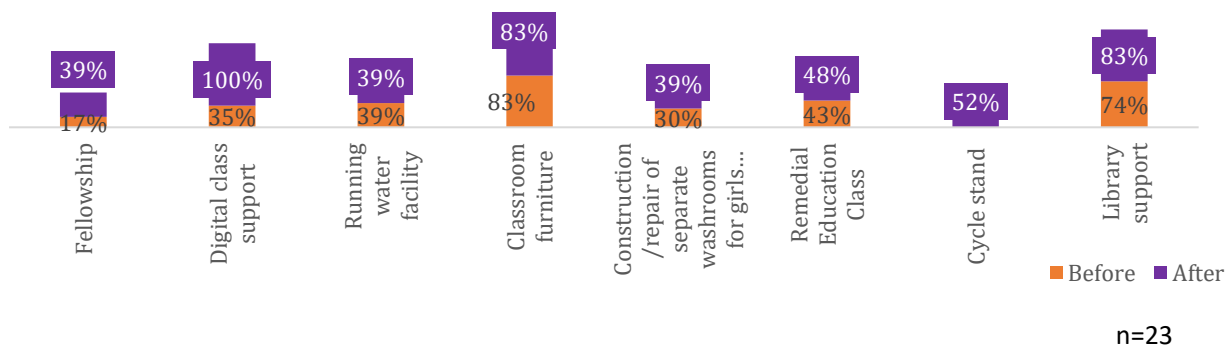
**Figure 26: An overview of project effectiveness and impact on Education**



### Educational Institutions

The programme undertook a combination of activities targeted toward improving student enrolment, attendance, and learning outcomes in the programme area. It focused on establishing model schools and equipping schools with infrastructure such as – cycle stands, basic furniture, digital class, drinking water facilities, separate washrooms for boys and girls, and renovation based on the need of the school. Moreover, further assistance was provided to children from the weaker sections of society in the form of fellowships and remedial coaching classes to build on their capabilities and continue with higher education.

**Figure 27: Infrastructural services available before and after project inception**



As highlighted in the figure above (fig. 27) and the qualitative interactions, a cycle stands for the students was the only intervention that was completely new for the project areas and it was of extreme importance. However, when looking at the usage of certain provisions, the results are unsatisfactory. For instance, the usage of digital class support devices (projectors/computers) was close to “sometimes or never” as the teachers did not know how to operate them and were not in the habit of using them (82%). Basis qualitative interaction, it was found that teachers did not get proper training on operating the projectors received, or the teacher training on its operation was no longer associated with the school, leaving the facility unutilized. Moreover, certain schools received only one computer which made it difficult to hold classes for all students. However, as pointed out by one of the model school Principals, digital education training classes for students were held in school for one year but did not continue post-2020. This intervention was highly appreciated by the teachers and students. Although, these classes could only be possible because the school had a separate computer room with a number of computer units.

Regarding libraries, books, logistical and infrastructure support was provided to the schools on a need’s basis. On account of the support provided, the usage of the libraries reported an increase (ref.

**Figure 28: Usage of library by students**

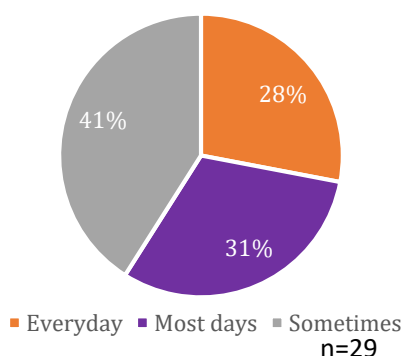


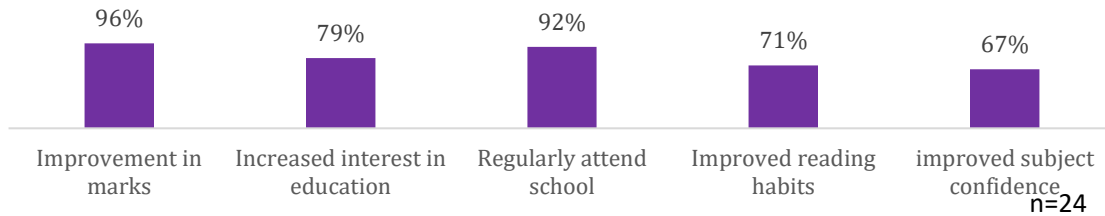
fig. 28) as against its usage only sometimes (53%) and never (35%) prior to the programme. The library has benefitted children by improving reading habits (73%), finding reference material for exams (97%), and reading material beyond the syllabus (97%).

Having a proper sanitation facility is a crucial factor in maintaining school attendance. As highlighted by the students, toilets constructed/renovated in the school are functional and being used every day by the students which helped them in attending school regularly (100%). Although, maintaining clean toilets is still an issue for students. The running/drinking water facility is being used by the students

every day and has helped in lessening health issues, increasing time spent at school, and providing access to clean drinking water (100%).

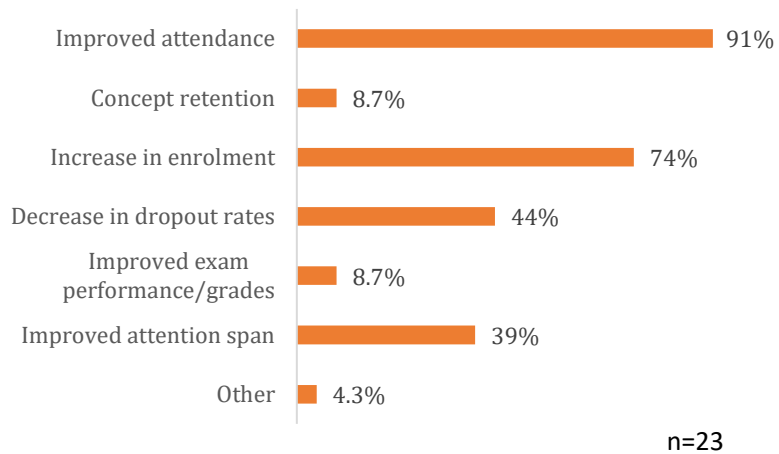
The fellowship received by the students (32%) helped them in improving subject confidence (100%), continue further education (100%), and pursue their career goals (91%). Likewise, 71% of the students interviewed also reported being benefited from remedial coaching classes available for high school students as can be seen from the figure (ref. fig. 29). The qualitative findings highlighted students’ appreciation for the classes as they were free of cost and helped them in clarifying their doubts. Moreover, students who pass out of 10<sup>th</sup> standard want to continue availing these classes as it not only assists them with their studies but also helps the poor with better educational assistance.

**Figure 29: Benefits of remedial coaching classes**



Findings show a strong relationship between infrastructure developments and an increase in attendance and enrolment rate (ref. fig. 30). Qualitative interactions with the staff at the programme supported model schools seconded these findings which highlighted that there has been an increase in the enrolment rate of students due to the school upgradation as the school was seeing more and more students from the private school move to the model school because of better and more facilities. Moreover, Anganwadi workers also informed that the renovation of anganwadis has increased the number of children attending the same.

**Figure 30: Changes observed among students due to the project infrastructure developments**





## 4.6. Sustainability

The sustainability of the interventions is looked at from the criteria of structures established, technical know-how, usage, and maintenance. **Most of the beneficiary farmers are currently practicing the services and practices accessed through the project under farm management.** These are namely adoption of SRI cultivation, the use of organic fertilizer, the use of the seed bank, and the Agriculture Resource Centre (tools). 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. The tools and machines have been handed over to the farmer groups. **Further, the groups and committees formed for the seed bank and seedling factory are very much in operation and have been performing their duties/responsibilities. However, the intervention in the adoption of vermi pits by farmers has not seen many results.** Moreover, 95% of the beneficiaries reported the solar street lights being operational even after the end of the project indicating the sustained impact of the project.

**In the case of agricultural training, all farmers are 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. **The programme's efforts to ensure a sustainable means of livelihood and income for women and farmers have mostly transformed into positive results** and have been appreciated by the community. **Most enterprises established with the help of group mobilization, technical training, and monetary assistance are functioning.** Moreover, beneficiaries supported with livestock birds and fishlings reported benefitting from increased income and nutrition, however, some reported early deaths of their livestock, leading to no income generation. All of the enterprise owners are continuing with the project-supported enterprises, **the problem of market linkages and more capacity-building training need to be addressed to ensure sustained benefits.**

The sensitization sessions have helped in increasing the community's awareness regarding nutrition and hygiene. However, although the community has observed positive changes in their lifestyle after the knowledge received from these sessions, the impact has been medium as most of the changes have figures less than 50%. **The arsenic and iron removal plants have been supplying the respective village community with a sustained supply of clean drinking water.** Moreover, the constitution of a water user group (community ownership) and the caretaker ensures a sustained impact of the intervention.

The project also focused on improving the learning environment in intervention schools by reducing infrastructural gaps and improving the quality of existing infrastructure. Findings from the quantitative survey indicated that the **structures built in the school namely separate washrooms for boys and girls, hand wash stations, running water supply system, and libraries are still functional and are utilized frequently.** The anganwadis refurbished have seen more usage by the children and parents. **The remedial education classes have been praised by parents, students, and teachers as they helped students improve their marks and they hope for more such interventions in the future and also for students of 12<sup>th</sup> standard.** However, the digital support

provided to schools in terms of computers and projectors has not benefitted many students due to a lack of teachers’ knowledge and insufficient devices and infrastructure.

#### 4.7. Holistic Rural Development Index (HRDI)

According to the World Bank, there are multiple dimensions involved in achieving the goals of rural development and the resulting mixture raises agricultural production, generates new jobs, enhances health, increases communication, and provides better living infrastructure. Rural development is defined by the World Bank as the improvement in the social and economic environment of the rural population. Thus, the fundamental aims of rural development include planning, creating, and using the resources such as land, water, and manpower to promote equal opportunity for the population reliant on them.

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

**Table 9: Holistic Rural Development Index for Assam**

Domain	NRM		Skill and Livelihood		Health and Sanitation		Education		Overall HRDI	
	Baseline	Endline	Base line	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
HRDI Score	<b>0.12</b>	<b>0.15</b>	<b>0.12</b>	<b>0.18</b>	<b>0.02</b>	<b>0.10</b>	<b>0.06</b>	<b>0.12</b>	<b>0.33</b>	<b>0.54</b>
% Change	<b>25%</b>		<b>50%</b>		<b>400%</b>		<b>100%</b>		<b>64%</b>	

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 6.4.

Further, the thematic-wise indicators were assigned weights to arrive at the composite HRDI score of **0.54** indicating **a notable positive change toward the desired impact** from the baseline score of 0.33.

## 5. Conclusion

### 5.1. Summary of Findings

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

The project interventions have been **effective in bringing clear changes in the income of farmers through improved productivity, reduced input cost, and farming techniques and assistance.** Traditional farming practices, mainly for paddy cultivation got farmers less yield and therefore less income before the project. The project also brought about changes in facilitating access to clean energy solutions such as solar lights.

**Skill and livelihood enhancement activities also have opened up economic opportunities not just for farmers, but for women 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 capital to undertake and expand entrepreneurial activities during the project period. While completely sustained profit generation is yet to be achieved by some enterprises as they faced a bump in their activities due to COVID-19, the project was successful in initiating entrepreneurial activities in the community. **Moreover, procuring input (quality seeds for mushroom cultivation), maintaining the group members' motivation to continue production, and market linkages are still a challenge for certain enterprises.** The support provided through livestock birds and fishlings and livestock management services turned out to be fruitful overall for its beneficiaries from an additional source of income and nutrition perspective.

The **health interventions** aimed at facilitating access to health and sanitation services have been effective in terms of improving household health status and bringing about positive lifestyle changes. However, **the intervention could not reach its full impact. More effort is required in promoting personal hygiene and maintaining surroundings clean as the consumption of tobacco is high in the community including school children.** The arsenic-free water supply has benefitted the community immensely and has improved health.

The **project has also contributed toward improving and enhancing the infrastructural and learning environment at schools and anganwadis.** To facilitate the same, several project interventions were undertaken in model schools 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, and has even led to increased enrolment according to the teachers.

Furthermore, to improve the learning environment, project support was also provided in terms of computers and projectors, and the upgradation of libraries. However, capacity building of teachers for the adoption of innovative teaching methods and digital literacy remains an area of improvement. **The project also contributed to improving the learning outcomes through remedial classes which have helped students in clarifying doubts.** The fellowships provided to students from economically poor backgrounds were greatly appreciated by the students and parents. 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:

### NRM

- Follow-up by agricultural experts is needed to ensure that farmers are practicing the techniques taught and are getting the results. This would also help to understand the challenges faced by farmers.
- Since the region is flood-prone, flood-resistant varieties of paddy need to be promoted in the area.
- More structures like seed banks need to be constructed to cater to the needs of the entire village population.

### Promotion of Education

- Convergence with the government for fellowships and sports support.
- Capacitating the school teachers and staff in operating computers.
- Continuation of remedial coaching classes for both 10<sup>th</sup> and 12<sup>th</sup> standard students and active involvement of School Management Committees to look after the upkeep of the infrastructure.
- Assistance in infrastructure development like classroom construction as the student-classroom ratio is low and the funds received by the government are insufficient for construction work.

### Health and Sanitation

- Enhancing the project's scope to focus on health-related interventions would promote the impact in the health dimension. Conducting more sensitization programmes on health issues and supporting the government's health infrastructure will support the community in improving health.
- Since most of the villages of the Nalbari district contain arsenic in underground water, the installation of arsenic-free water plants is imperative in the remaining villages.

### Skill Training and Livelihood Enhancement

- Handholding support to enterprises so they have marketing tie-up, linkages with government schemes, etc.
- More advanced training on production practices and the use of machines/tools for all members of the group to keep pace with the demands of the market. For instance, better designing and dyeing training for weavers.

## 6. Annexures

### 6.1. Sampling Methodology

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

#### 6.1.1. Quantitative Sample Size Calculation

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

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

Where,

$N$  = sample size

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

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

$S_e$  = margin of error, set at 5%;

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

Thus, the estimated maximum sample size is 400.

#### Quantitative Sampling Methodology

All 7 programme villages were selected for the study. The stages of sampling are explained as follows:

##### **Stage 1 - Selection of beneficiaries:**

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

##### **Stage 2- Sampling for villages:**

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

##### **Stage 3- Sampling for Themes:**

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

### 6.1.2. Qualitative Sample Size Calculation

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

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

## 6.2. Sustainability Thematic wise matrix

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

Support provided	Structures established	Technical Know-how	Usage	Maintenance
<b>NRM</b>				
Farm Management	✓	✓	✓	✓
Clean Energy	✓		✓	
<b>Skill Training and Livelihood Enhancement</b>				
Agriculture Training and Support		✓	✓	X
SHG-Based Women Empowerment	✓	✓	✓	✓
Entrepreneurship Development	✓	✓	✓	
Livestock Management		✓	✓	✓
<b>Health and Sanitation</b>				
Health		✓	✓	
Water Management - Drinking	✓	✓	✓	✓
<b>Education</b>				
Educational Institutions Development	✓		✓	✓

## 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 50<sup>th</sup> percentile of these indicators at baseline was chosen as the cut-off point. **Thus, a change in the indicator could be captured by recording the proportion of beneficiaries above the cut-off at two distinct points in time.**

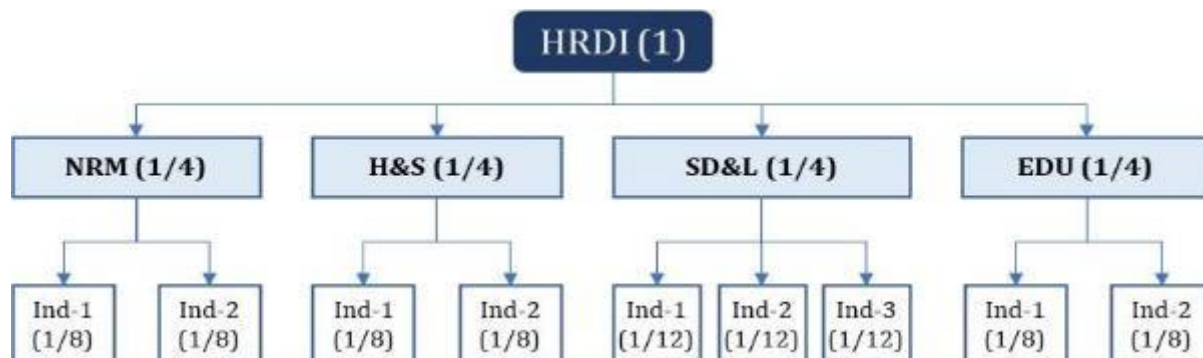
### Indicator Weights

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



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

Domain and indicator weights<sup>15</sup>



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		
Natural Resource Management	The proportion of farmers with net income above median	$(1/4) \times (1/1) = 0.25$
Health and Sanitation	Percentage of households with access to improved drinking water facility	$(1/4) \times (1/1) = 0.25$
	Proportion of households with income from enterprises above median	$(1/4) \times (1/4) = 0.0625$
Livelihoods and Skill development	Percentage of households with improved skills in Agriculture ((SRI, organic manure, timely application of fertilizers and pesticides)	$(1/4) \times (1/4) = 0.0625$
	Proportion of households with income from Livestock above median	$(1/4) \times (1/4) = 0.0625$
	Proportion of SHG women with income from enterprise above median	$(1/4) \times (1/4) = 0.0625$
Education	Percentage of students reporting increased access to infrastructure	$(1/4) \times (1/2) = 0.125$
	Percentage of students reporting access to fellowship	$(1/4) \times (1/2) = 0.125$

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

**Analysis Plan:** HRDI for each cluster/ NGO was calculated at two points in time i.e., before and after HRDP and can be compared cross-sectionally to understand which domains contributed to an increase or decrease in HRDI value. Concurrently, the NGOs can be ranked according to the HRDI

<sup>15</sup> NRM: Natural Resource Management | H&S: Health and Sanitation | SD&L: Skill Development and Livelihoods | EDU: Education

score based on their performance across different domains, but care should be taken as the project context varies for each area. Since the value attribution of the indicators is in proportions, the HRDI value numerically ranges between 0 and 1.

### Method to calculate HRDI

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

**Step 2:** A cut-off value was calculated by taking the 50<sup>th</sup> 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 50<sup>th</sup> percentile i.e., the median value of the income was taken. This median or 50<sup>th</sup> percentile was taken as the cut-off (baseline cut-off to be precise).

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

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

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

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

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

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

Domain	Indicators	Baseline	HRDI	End line	HRDI	% Change
NRM	Proportion of farmers with net income above median	0.50	0.12	0.60	0.15	25%
H&S	Percentage of households with access to improved drinking water facility	0.09	0.02	0.41	0.10	400%
Skill	Proportion of households with income from enterprises above median	0.14	0.12	0.19	0.18	50%
Skill	Percentage of households with improved skills in Agriculture (SRI, organic manure, timely application of fertilizers and pesticides)	0.13		0.17		
Skill	Proportion of households with income from Livestock above median	0.11		0.16		

<b>Skill</b>	Proportion of SHG women with income from enterprise above median	0.11		0.19		
<b>ED</b>	Percentage of students reporting increased access to infrastructure	0.20	0.06	0.30	0.12	100%
<b>ED</b>	Percentage of students reporting access to fellowship	0.05		0.16		
<b>Total</b>		0.33		0.54		64%

## 6.4. Overview of Impact Calculation

Table 10: An overview of project impact in NRM<sup>16</sup>

Goal: Effective utilization of local resources and adequate access to water for various purposes				
Outputs	Output Indicators		Ouput Avg	Impact level
<b>Increased income from agriculture</b>				
1 Land/ crop productivity	(a) Proportion of farmers reporting increase in production of crops that were supported under HRDP	97%	62%	Medium
	(b) Proportion of farmers reporting increased input efficiency after the intervention	78%		
	(c) Proportion of farmers reporting increased income from crops that were supported under HRDP.	99%		
	(d) Average increase in income from crops that were supported under HRDP (% change)	54%		
	(e) Average increase in productivity from crops that were supported under HRDP(% change)	23%		
	(f) Average decrease in input cost (% change)	23%		
2. Access to farm management infrastructure	(a) Proportion of beneficiaries fully satisfied with quality of available services (in farm management)	64%	62%	Medium
	(b) Proportion of farmers reporting project interventions in seeds, tools and irrigation leading to increase in production	67%		
	(c) Proportion of farmers reporting project interventions leading to increase in income	67%		
	(d) Proportion of farmers currently practicing organic farming/SRI/other sustainable practices	76%		
	(e) Proportion of farmers reporting an increase in the use of natural fertilizers?	38%		
3 Increased adoption of crop diversification	(a) Proportion of farmers diversified their crops with project support?	23.0%	46.0%	Medium
	(b) Proportion of farmers who report income increase due to crop diversification (base = farmers who adopted crop diversification)	69%		
<b>Increased use of clean energy solutions</b>				
1.Adoption of clean energy infrastructure	(a) Proportion of HHs using clean energy infrastructure (operational solar lights)	95%	97%	High
	(b)Proportion of households reporting benefits from using clean energy infrastructure	99%		

<sup>16</sup> 100%-70% - High impact; 40%-70%- Medium impact, <40% - Low impact

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

<b>Goal: More Income for the HHs through Diverse income sources locally to farmers, youth and women</b>				
<b>Outputs</b>	<b>Output Indicators</b>		<b>Output Avg</b>	<b>Impact level</b>
<b>Improved access to agricultural training and services</b>				
1 Access to Agriculture training and services	(a) Proportion of farmers who reported project training services are useful	99%	71%	High
	(b) Proportion of farmers who demonstrate awareness regarding sustainable farming practices	42%		
2. Adoption of improved farming practices	(a) Proportion of farmers who adopt scientific agricultural practices	39%	68%	Medium
	(b) Proportion of beneficiaries reporting increase in productivity due to better farm management	77%		
	(c) Proportion of farmers reporting increased income	89%		
<b>Economic empowerment through collectivization (Only for SHG members)</b>				
1. Formation/ revival of SHG based Enterprises	(a) Proportion of members who received support with establishing/reviving SHG enterprises	49%	74%	High
	(b) Proportion of members whose SHGs are currently functioning	98%		
2. Development of entrepreneurship	(a) Proportion of SHG members who received training	48%	69%	Medium
	(b) Proportion of SHG members undertaking entrepreneurial activities	29%		
	(c) Proportion of SHGs with increased savings	99%		
	(d) Proportion of SHG members reporting improved income	99%		
<b>Enhanced capacity for regular income generation</b>				
1. Access to self-employment and entrepreneurial opportunities	(a) Proportion of beneficiaries who established/ expanded entrepreneurial activities	12%	49%	Medium
	(b) Proportion of beneficiaries reporting improved capacity to undertake entrepreneurial activities	40%		
	(c) Proportion of beneficiary HHs reporting increase in income	94%		
<b>Improved capacity to generate income through livestock management</b>				
1. Adoption of scientific management of livestock	(a) Proportion of beneficiaries who received support in livestock management services	52%	53%	Medium
	(b) Proportion of beneficiaries reporting increase in income from livestock management	64%		
	(c) Proportion of beneficiaries reporting improved livestock health	44%		
	(d) Proportionate increase in average income from livestock	50%		

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

Goal: Healthy lives and good hygiene practices				
Outputs	Output Indicators		Ouput Avg	Impact level
<b>Improved health infrastructure and services</b>				
1. Establishment/ enhancement of health infrastructure and services (awareness sessions)	(a) Proportion of beneficiaries who gained access to health services	73%	86%	High
	(b) Proportion of beneficiaries reporting lifestyle changes due to improved access	99%		
<b>Improved awareness and health seeking behaviour</b>				
1. Awareness regarding health and sanitation practices	(a) Improved dietary practices/increased knowledge about critical health issues	63%	63%	Medium
	(b) Improved awareness regarding cleanliness and sanitation practices	83%		
	(c) Improved awareness regarding waste management	43%		
<b>Improved availability and management of water</b>				
1. Access to drinking water at household and community level improved	(a)Proportion of households reporting decreased instances of water borne diseases	73%	77%	High
	(b)Proportion of households reporting reduced time for fetching water	82%		

**Table 13: An overview of project impact on Education**

Goal: Active participation and effective learning of children in quality education centres				
Outputs	Output Indicators		Ouput Avg	Impact level
<b>Outcome -Improved capacity of educational institutions to provide services</b>				
(i) Access to improved physical infrastructure	(a) Proportion of students/schools who report gaining access to functioning smart class rooms/ BaLa/science labs/libraries/cycle stand/furniture/sports equipment	89%	77%	High
	(b) Proportion of schools/students who gained access to clean and functioning sanitation units/drinking water posts at education institutions	64%		
(ii) Improvements in quality of teaching	(a) Proportion of teachers regularly utilising smart class rooms/libraries/smart class	39%	38%	Low
	(b) Proportion of students who prefer/regularly use smart class rooms/science labs/ libraries for lessons	0%		
	(c) Proportion of parents/students/teachers who report improvements in teaching quality	76%		
(iii) Improved willingness to engage in	(a) Teachers reporting improvements in attendance due to improved infrastructure	91%		Medium
	(b) Proportion of teachers reporting increase in enrolment post infrastructure development	74%		



school activities	(c) Proportion of institutions reporting decrease in dropout rates	44%	70%	
<b>Improved learning outcomes</b>				
(i) Improved exam performance and subject confidence among students	(a) Proportion of students who gained access to coaching classes	71%		Medium
	(b) Proportion of students who report improvements in access to reference material	97%		
	(c) Proportion of students reporting an increase in confidence in various subjects (lessons are easy to understand, more interesting etc.)	67%		
	(d) Proportion of students who received scholarships	32%		
	(e) Proportion of teachers reporting improvements in learning outcomes due to infrastructural facilities at institutions (concept retention, attention span and exam performance)	19%	57%	
<b>Improved Awareness</b>				
(i) Improved Awareness among students, parents and teachers	(a) Awareness activities conducted	30%	30%	Low

\*\*\*