

Impact Assessment Study Of Holistic Rural Development Programme (HRDP)

Meghalaya



Prepared For:



HDFC Bank CSR

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Executive Summary

The Holistic Rural Development Programme (HRDP) was **implemented by FXB India Suraksha in Ri Bhoi district in Meghalaya** supported by HDFC Bank. The impact assessment was conducted to assess the impact of the programme on beneficiaries. The study largely focused on understanding the key milestones achieved, the impact created by these activities, and the challenges faced. The **key focus areas of the intervention were Health and Sanitation, Skill building and Livelihood enhancement, Education and Natural Resource Management**. The framework used was an adaptive version of the DAC criterion- Relevance, Effectiveness, and Sustainability. **A comprehensive methodology, comprising both primary and secondary data collection was used** for the assessment and the assessment was carried out in a participatory manner involving all the key stakeholders of the programme. The study had a **sample size of 436** interviewees as against the planned sample of 400.

NRM: Increasing access to inputs and collectivization of farmers were the focus areas under the natural resource management component of the project. While interventions in the areas of adoption of poly houses, SRI farming and fish cum paddy farming models were tested and promoted, the adoption was minimal and discontinued. Adverse weather conditions for fish farming in paddy fields and lack of consistent income generation were cited as the main reasons for the low adoption during qualitative interactions. However, training and demonstrations through the intervention have made the farmers aware of sustainable farming practices like the **application of organic manure (71%), construction/use of vermi compost pits (46%), and conservation agriculture practices (15%)**. The solar street lights installed in the programme villages have benefited the community and **92% of the beneficiaries reported the solar street lights being operational even after the end of the project**.

Health and Sanitation: The challenges faced by the community in terms of easily accessing water sources, storage of drinking water and awareness regarding the need for proper nutrition, health and hygiene were recognized by the programme. 73% of the households availed the health services under the programme. Health and hygiene training sessions were conducted at schools in addition to the provision of nutrient supplements through the Anganwadis and Suraksha Education Centres. The change in drinking water sources has greatly **decreased instances of waterborne diseases, as reported by 74% of households. They have also reported less fatigue (42%) and relief in stomach-related issues (35%)**. An increase in appetite and decreased visits the doctor has also been seen in some responses. It has **greatly benefitted the women by helping them save time in fetching water (93%) and saving additional effort in fetching water (80%)**. Qualitative discussions also indicated access to better sanitation infrastructure such as community taps, washing areas and toilets has reduced the spread of malaria in the community. Furthermore, upgrading primary health centres in the areas has also positively influenced the access to health services for project villages.

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 study findings, the intervention on the involvement of SHG members in enterprise development has been effective overall **in boosting entrepreneurial skills and boosting their confidence to undertake business activities. SHG enterprise beneficiaries also reported an 87% increase in their mean income (from Rs. 117 to Rs. 920)** during the project period though enterprises have stopped functioning due to increasing raw material expenses. However, qualitative interactions indicate that women are keen on starting a new business in the future and are confident that they can manage the same. The programme also undertook market area development in one of the villages wherein the shopkeepers have seen an **increase in the number of customers (10-20 customers), improved cleanliness and better access to lighting through solar lights** installed. 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 138% average increase in monthly income from Rs. 1394 to Rs. 3324** (median monthly income from Rs. 250 to Rs. 1200) **and** most of the farmers are continuing with poultry/piggery etc. even after the end of the project. Farmers were trained to upgrade their skills.

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.** Appropriate sanitation structures in schools play an imminent role in children’s education and maintaining school attendance. Thus, the students highlighted that **the construction/renovation of toilets in schools has helped them in attending school regularly (87%)** and spending more time at school **(33%)**. 87% of the teachers also reported all washrooms being in good working condition. The project facilitated the development of Suraksha Education Centres and Digital Learning Centres. The students reported availing multiple benefits from enrolling at the SECs including **improved exam performance (97%), improved confidence to go to school (52%), and improved health and nutrition (6.9%)**. The qualitative findings highlighted students' and community’s appreciation for the classes as they were free of cost and helped them in clarifying their doubts.

HRDI Indicators: For assessing the effectiveness of the interventions, the study has used the Holistic Rural Development Index (HRDI). 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 **0.51** for Ri Bhoi.

Table 1: Summary of HRDI scores for Meghalaya

HRDI Score	NRM		Skill and Livelihood		Health and Sanitation		Education		Overall	
	Baseline	Endline	Base line	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
	0.19	0.24	0.04	0.10	0.03	0.09	0.04	0.09	0.3	0.51
% Change	26%		150%		200%		125%		70%	

Table 2: Summary of key income indicators

Income Indicators (based on mean)	Before	After	% Change
Mean Monthly Income from Livestock (INR)	1394	3324	138%
Mean Monthly Income from SHG (INR)	117	920	87%
Increase in net annual income from agriculture (Median value) (INR)	50244	54411	8.29%

Figure 1: Overview of project impact

	Natural Resource Management	Skill Training and Livelihood Enhancement	Health and Sanitation	Promotion of Education
Overview of Activities	Vermi pits, poly house, solar lights, smokeless stoves, Training in organic farming, conservation agriculture	Entrepreneurial training for youth and SHGs, distribution of chicks/piglets/fishlings, livestock health services, camps, and training	Health camps, awareness sessions, community and HH toilets, drinking water storage and pipe connection	Smart class, drinking water posts, furniture, separate washrooms for boys & girls, anganwadi renovation, SECs and DRCs
Areas of Improvement	<ul style="list-style-type: none"> 96% report awareness of conservation and sustainable agriculture practices. 92% report continued use of solar street lights. 	<ul style="list-style-type: none"> 695% increase in SHG income 138% increase in livestock income 	<ul style="list-style-type: none"> 74% report reduced waterborne diseases 80% report reduced effort in fetching water 	Improved access to facilities such as smartclass, washrooms, libraries, improved attendance, and teaching quality
Challenges	<ul style="list-style-type: none"> High cost of adoption & inadequate information discourage farmers to adopt innovative techniques 	SHG members discontinued group enterprises' business due to the lack of handholding support for consistent income generation and risks involved.	Community involvement in the maintenance of sanitation infrastructure and irregular water supply.	Lack of funding to continue operationalization of SECs.
Recommendations	Farm Management techniques with better feasibility and suitability with regard to the weather conditions can be promoted to ensure sustained impact.	Handholding support to enterprises so they have marketing tie-up, business plan development linkages with government schemes, etc.	Enhancing the project's scope to focus on capacity building and awareness generation regarding health, sanitation, and maintenance work.	Capacitating the school teachers and staff in operating smart classes. Support for community management of coaching classes through SECs

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, FXB India Suraksha (FXBIS) was the implementing partner in the Ribhoi district of Meghalaya. The programme covered a total of 4 villages in the district. The major focus areas for the intervention were Skill Development & Livelihood Enhancement, Promotion of Education, Healthcare & Hygiene and Natural Resource Management (NRM). 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- FXBIS

FXB India Suraksha (FXBIS), established in 2007, is an Indian non-governmental, non-profit organization providing development assistance to marginalized children, women, and communities in rural and urban India. The organization has been working with the objective “of assisting people to lead a life of dignity by creating a safe, healthy and productive environment” while its mission is to “enable 5 million families to lead a life of dignity over the next ten years”.

The Holistic Rural Development Project (HRDP) was initiated in 4 villages of Umling Block of Ri Bhoi district of Meghalaya with the support of HDFC Bank Ltd.

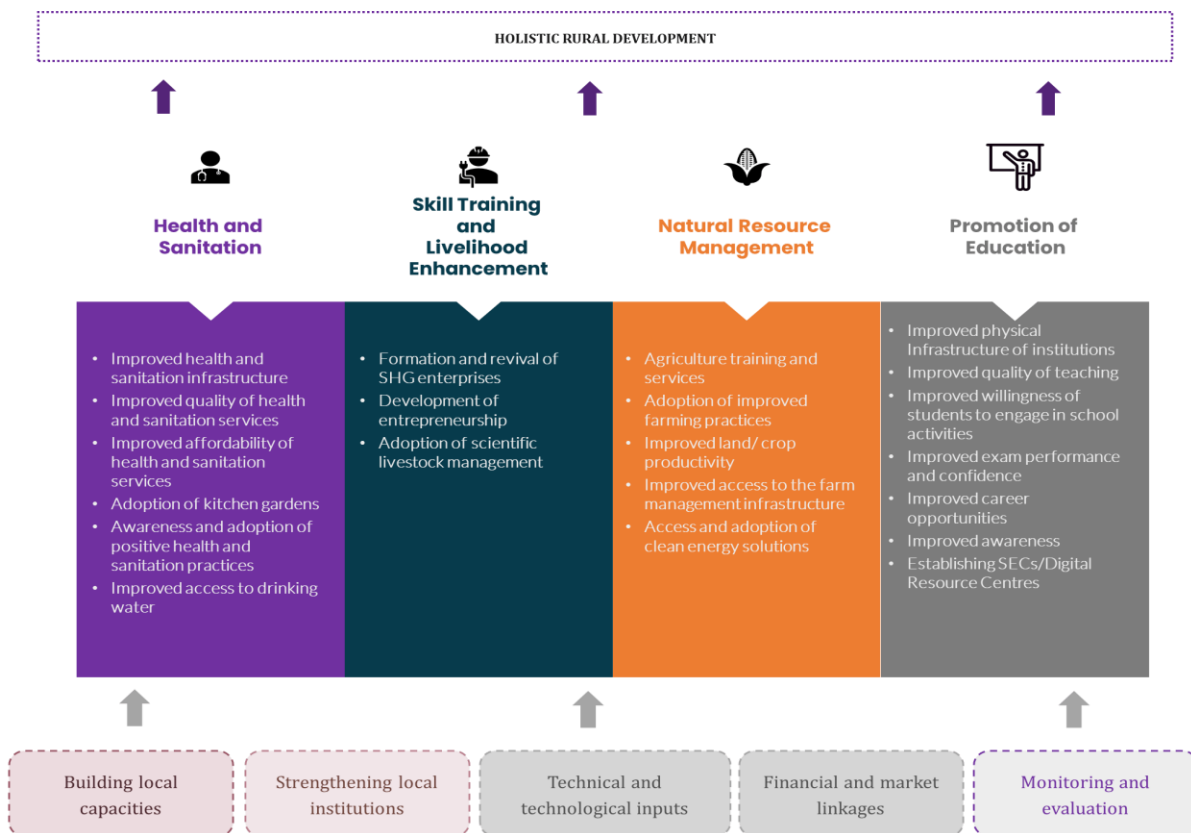
FXBIS aimed to accelerate the socio-economic growth of marginalized and underprivileged families by enhancing community action for the initiation of a sustainable development process. The project’s overall benefit reached the entire community of each targeted village but families and people from socio-economically 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.

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 Meghalaya, particularly in the Ri Bhoi district. In the district, 4 villages were covered in the Umling block.

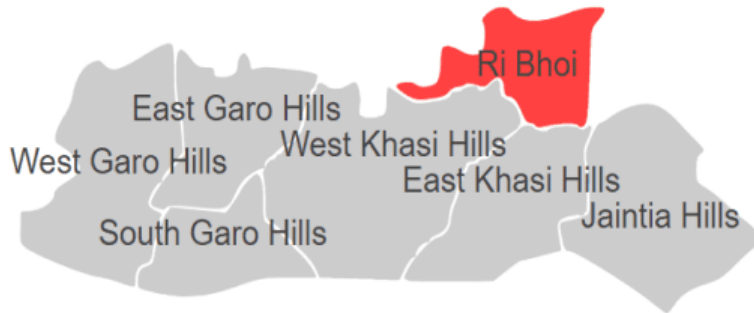


Figure 3: Areas covered under the study

Image 1: AWC renovated in Pahambirthem village



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 effectiveness¹ 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.

¹ 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
Ri Bhoi	396	168	276	162	436
Planned	80	120	120	80	400

The total sample calculated for the study was 436. 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 FXBIS 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 15 IDIs and FGDs were conducted to assess the change that has happened over time.

Table 4: Qualitative sample size covered

Ri Bhoi	FGDs				IDIs				
	SHGs	VDCs	Shopkeepers	Livestock owners and farmers	Teachers	Farmer	AWW	Livestock owner	Village Secretary
Total	3	3	1	1	3	2	2	1	1
Planned	7				8				

Image 2: Training of field team held at Rhiboi, Meghalaya



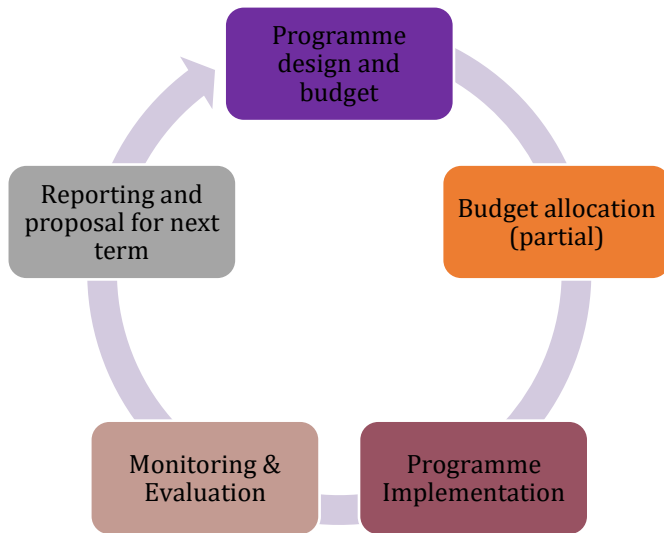
Since there was no baseline available for this evaluation, the recall method was used in the household survey to assess the change that has happened over time. For this purpose, the respondents were asked to recall the value of critical indicators at the start of the program. Teams of local enumerators,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

3. Program Review

3.1. Program Design and Implementation

The programme’s interventions are decided on an annual basis, with an annual budget allocation based on the proposal by FXBIS to HDFC Bank. Based on our discussions with the partner team, a

Figure 4: Project Planning and implementation process



preliminary rapid rural appraisal (RRA) was conducted to explore the problems and constraints in the villages. 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.

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

3.2. Program Relevance

NRM: According to the 2011 Census, 90.2 % population of Ri Bhoi district lives in rural areas of the district². 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 continue to adopt traditional methods of farming. The programme, therefore, focused on improving farmers' access to inputs such as machinery and provided technical and financial assistance in setting up poly houses and adopting SRI, fish cum paddy farming etc. 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 in addition to smokeless chullahs for households to reduce efforts in firewood collection, especially for women.

Image 3: Poly house set up under the project for floriculture



Image 4: Separate community toilets built for men and women



Health and Sanitation: Better health is vital for the socio-economic development of people. According to the National Family Health Survey, only about half of the households (55%) access improved sanitation facilities.³ With regard to AWCs, the literature indicates that less than half of the AWCs (48%)⁴ had their own building as of 2018 indicating the infrastructural constraints the district faced at the time of project inception. 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 upgrading AWCs and constructing separate washrooms for males and females at the community and household levels. The project also involved the construction of waste management structures

² Anon. n.d. "Ri Bhoi District Population Census 2011 - 2021 - 2023, Meghalaya Literacy Sex Ratio and Density." Retrieved January 6, 2023 (<https://www.census2011.co.in/census/district/383-ri-bhoi.html>).

³ GOI. n.d. "District Fact Sheet Ribhoi Meghalaya." *National Family Health Survey - 4, 2015-16*.

⁴ MATI. 2021. "Aspirational Districts Programme in Ri Bhoi District, Meghalaya." *Meghalaya Administrative Training Institute*. Retrieved January 6, 2023 ([http://www.mati.gov.in/docs/Foundation%20Course/PDF%20\(19th%20July%202021\)/Aspirational%20District-Ri%20Bhoi.pdf](http://www.mati.gov.in/docs/Foundation%20Course/PDF%20(19th%20July%202021)/Aspirational%20District-Ri%20Bhoi.pdf)).

such as garbage disposal units, washing platforms and community taps considering the poor access to piped water connections in households.

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 (broom-making units) to promote entrepreneurship and livelihood diversification among them.

Furthermore, since poultry, piggery, and fishery, are the major allied agricultural activities in the district, the project has also aimed at improving income generation from livestock management through the distribution of chicks, piglets and fishlings in addition to supporting pig pen/poultry shed construction, training in scientific livestock management and providing access to livestock health services.

Educational Institutions Development: As of 2018, only about half of the schools in the district (54%)⁵ had access to functional drinking water facilities in the district which is a major intervention area of the project. Through HRDP, the village schools were also renovated, provided class room furniture, and smart class in addition to the construction of separate washrooms for boys and girls. The project also undertook the development of Suraksha Education Centres aimed at providing supplementary classes to students and educational services for dropout students. Considering the absence of educational facilities apart from village primary schools, the education centre played a pertinent role in improving the availability and access to educational services in the village.

Image5 : Piggery unit set up under the project



Image 6: Project supported RCLP school in Pahamshken village



Furthermore, the project also aimed at bridging the skill gaps among the youth by setting up a Digital Resource Learning centre wherein students were provided coaching in IT skills. Upon completion of the project, the implementation partner is continuing its operation with the support of the community and other stakeholders.

⁵ MATI. 2021. "Aspirational Districts Programme in Ri Bhoi District, Meghalaya." *Meghalaya Administrative Training Institute*. Retrieved January 6, 2023 ([http://www.mati.gov.in/docs/Foundation%20Course/PDF%20\(19th%20July%202021\)/Aspirational%20District-Ri%20Bhoi.pdf](http://www.mati.gov.in/docs/Foundation%20Course/PDF%20(19th%20July%202021)/Aspirational%20District-Ri%20Bhoi.pdf)).

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.

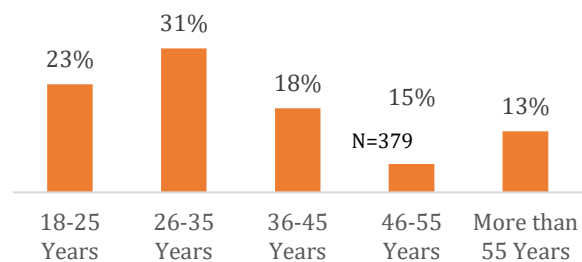
4.1. Demographic profile

This section provides the demographic profile of the respondents covered in the sampled program villages. In Meghalaya, the assessment was undertaken in the Umling block of the Ri Bhoi district.

Two third of the quantitative survey sample were female respondents considering women were easily accessible in the households during the survey. The sample was almost distributed among different age groups as indicated in Figure 5.

All community members belonged to the social category of the scheduled tribe with the exception of 0.3% who belonged to the scheduled caste category. Furthermore, 83% belong to the BPL category while there was no representation in the APL category indicating the high poverty levels in the community. While 67% stayed in semi-pucca houses, about one-fifth used kutcha (15%) and pucca houses.

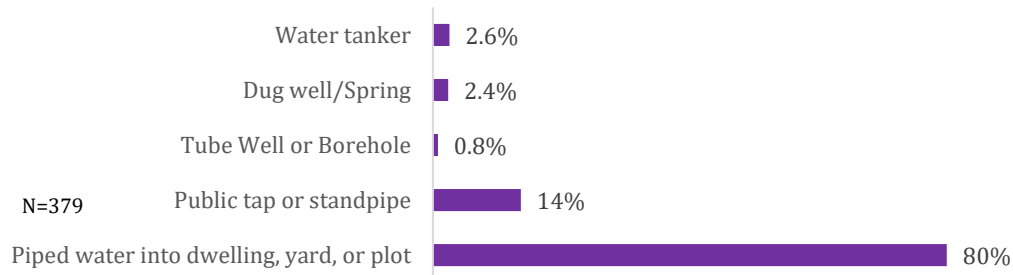
Figure 5: Age category of respondents



84% of the community members reported agriculture as one of the main income sources while about one-fourth (26%) reported livestock management. However, only 4% reported salaried employment and 6% reported having access to non-agricultural income. Apart from agriculture, wage labour was the most reported income source.

Firewood is the primary source of cooking fuel while less than 4% use LPG or electricity. On the other hand, 80% of the households have access to piped water in dwellings (See Figure 6). However, qualitative interactions indicated that the water supply is not regular and hence the community also relies on community taps to meet their needs.

Figure 6: Sources of drinking water



4.2. Natural Resource Management

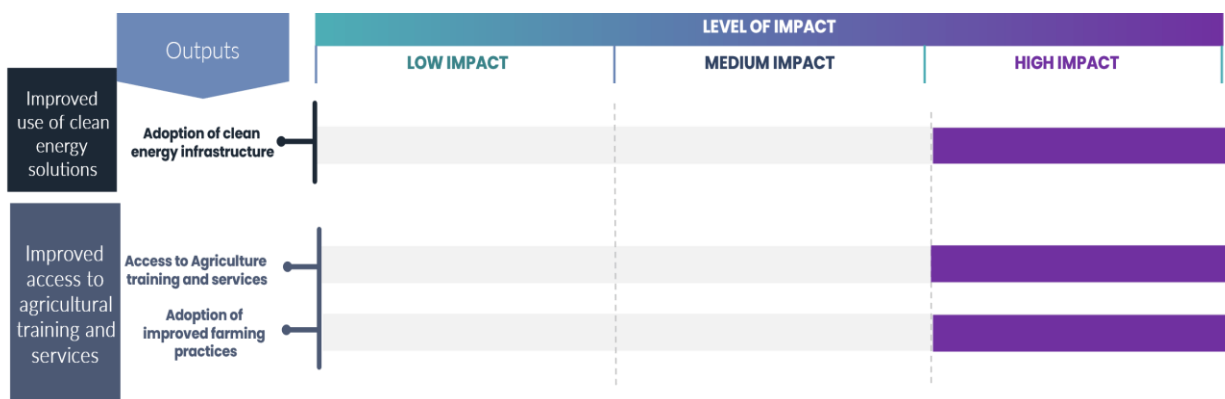
Table 5: Activities under NRM in Meghalaya

Activity Category	Activities
Agriculture Training and Support	Agriculture techniques training, and establishing/upgrading agriculture resource centres.
Farm Management	Poly houses, SRI demos, Farmer Clubs
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 impact⁶ (for all thematic areas) is attached in Annexure 6.4.

Figure 7: An overview of project effectiveness and impact in NRM⁷



Agriculture training and services

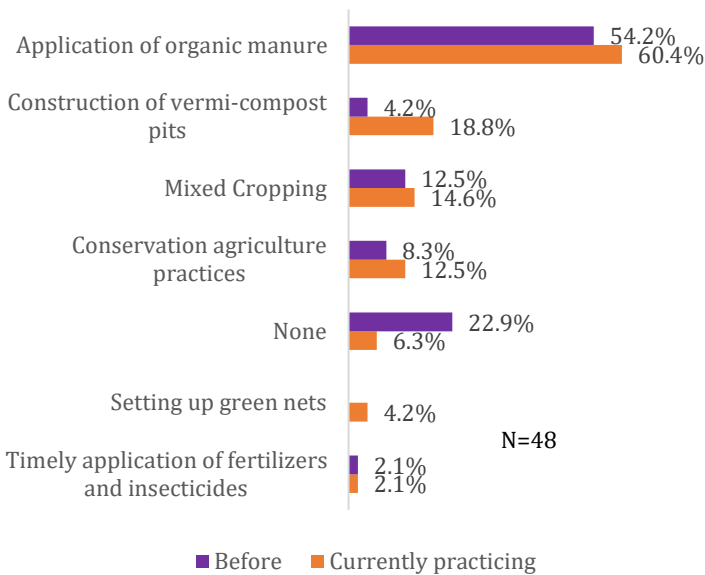
Of the total sample households covered, 13% of the respondents received agriculture training and support. **Among them, 73% accessed Farmer Club services supported by the HRDP project while more than one-third (35%) of the households have benefited from training in agriculture practices.**

HDFC bank training and demonstrations have made the farmers aware of sustainable farming practices like the **application of organic manure (71%), construction/use of vermicompost pits (46%), and conservation agriculture practices (15%)**. Farmer field schools and exposure visits have been greatly responsible for the training received and **88% of the farmers even found this training useful** as it helped in increasing their awareness of sustainable farming practices. Findings from the field indicate that there has been an **improvement in the practices done before vis a vis the practices adopted after** the intervention (See Figure 6).

⁶ As NRM interventions were mostly based on agricultural training and input provision, inadequate sample was available for irrigation and farm income generating activities such as SRI. Hence, NRM is not calculated in this report.

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

Figure 8: Adoption of agricultural practices before and now



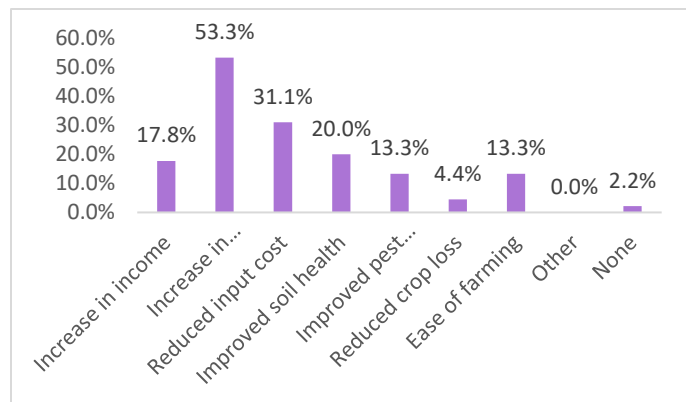
Farmers who adopted the new practices have noticed improvements mainly in the form of an increase in productivity (53%) (See Figure 7). Benefits in the form of an increase in income, reduced crop loss, ease of farming and improved pest management were low.

Farmer beneficiaries reported that their income median has increased by Rs.14000 (mean income Rs. 1,23,504) since the project inception due to the agricultural skills gained through the project. Moreover, as found out during the survey, some

Farm Management

Under farm management, the project largely focused on the establishment of farmer clubs and agriculture resource centres. According to a quantitative survey, **54% of the respondents highlighted that they were members of farmer clubs**, of which 73% said that the group was established under the HRDP project. The group members reported receiving support from the programme mainly in the form of inputs (54%), group training (46%), group registration (27%), and mobilization (19%). As per quantitative findings, **easy availability of inputs (77%), and access to training sessions (38%)** were

Figure 1: Perceived improvements due to adoption of agricultural practices



highlighted as the benefits of being project supported group member. Qualitative findings indicated that the farmer clubs are still functional and the involvement in farmer clubs has enabled them to access inputs especially machinery, which was not easily accessible otherwise. The **inputs** such as saplings spades, grass cutters, spray machines and weeding machines were provided through the farmer clubs and agriculture resource centres at a **heavily subsidized rate (Rs.5-10 rent per day)**. Farm beneficiaries from Pahammadaloi village, for instance, highlighted that they were able to save up to Rs,20,000 on saplings alone in a year as these were provided through the project. However, the figures for benefits in the areas of risk reduction (3.8%), market access (3.8%), and input efficiency

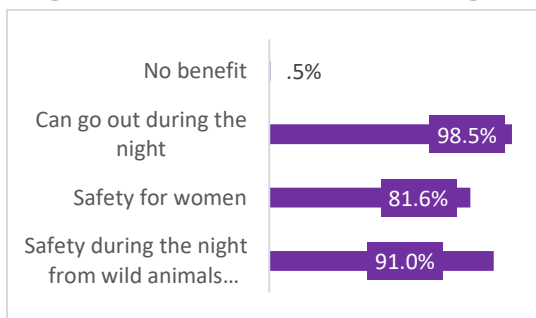
(3.8%) were reported low among farmer club members mainly because these were beyond the project scope.

Use of clean energy solutions

Enabling access to clean energy solutions was one of the primary project activities and has been widely adopted in the community. 58% of the quantitative sample reported availing of clean energy services through the project. The solutions provided largely included biomass chullahs, solar homes and street lights.

With regard to biomass chullahs, 62% reported using the same at least once a week while 17% used them every day. Reduced use of firewood consumption (83%) was the major benefit identified by the community which in turn reduced effort and saves money for the households. The chullahs were also reportedly saving time (30%) and cost (17%) of cooking.

Figure 10: Benefits for solar street lights



solar street light beneficiaries reported that solar street lights are still functional indicating high effectiveness and sustainability of the intervention.

As indicated in Figure 8, almost all beneficiaries highlighted their improved ability to go out at night considering the lack of street lights in the area with the exception of solar street lights installed under the project. Qualitative discussions across villages and age groups also highlighted the pertinence of solar street lights serving as a source of improved sense of safety and ability to spend more time outside for purposes including income generation.

Setting up solar lights has proved to be highly effective as all the villages have an erratic electricity supply. Beneficiaries reported that due to the project, they now have access to the solar street light at an average distance of 48m from their household. **92%**

of

Image 7: Solar Street Light installed in Pahamshken village



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.

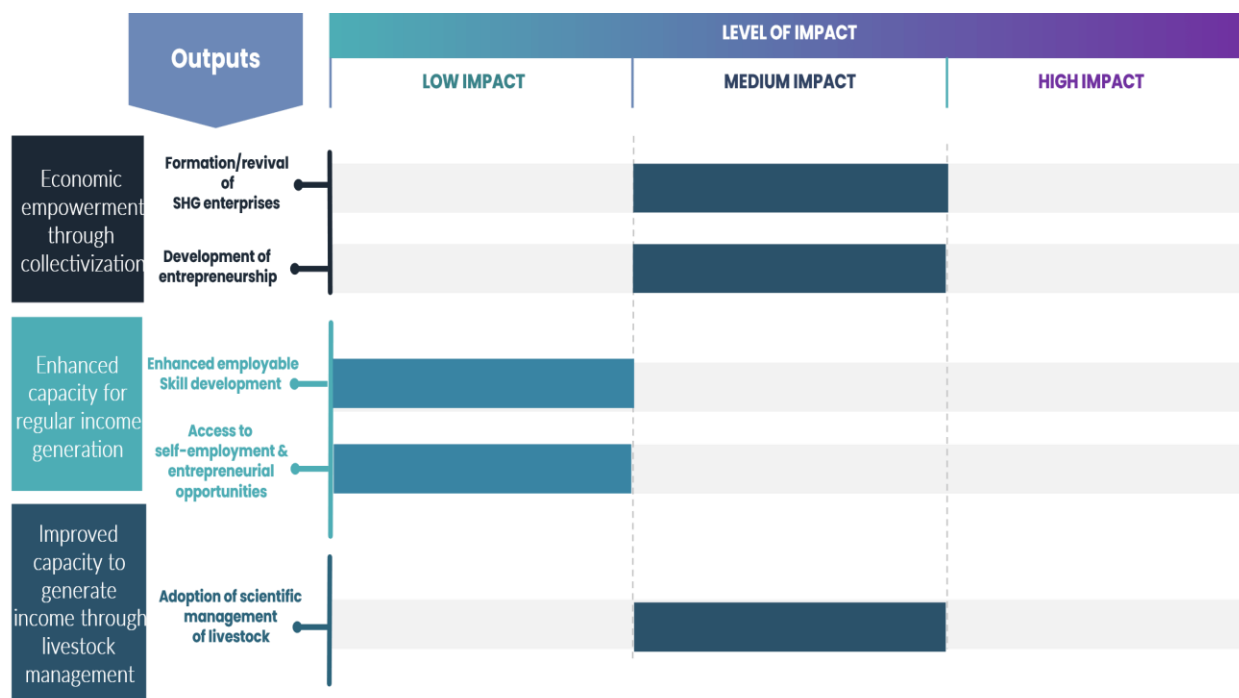
Table 6: Activities under skill training and livelihood enhancement in Meghalaya

Activity Category	Activities
SHG-Based Women Empowerment	Establishment of SHGs/reviving defunct SHGs, establishing/ expanding SHG-based enterprises namely broom-making units, training of SHG members in record booking.
Livestock Management	Vaccination and insemination services, piglets distribution, poultry distribution, financial/ material supports for pig and poultry sheds, training in livestock management, and fodder development units.
Entrepreneurship Development	Skill training, and support for enterprise development namely market area development

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.

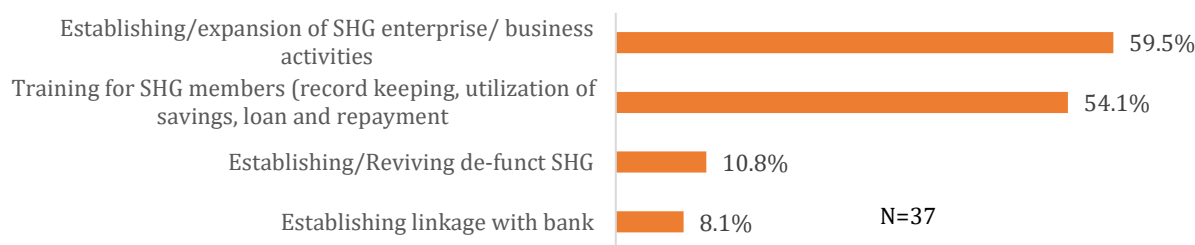
Figure 11: An overview of project effectiveness and impact and skill training and livelihood enhancement



Economic Empowerment through collectivization

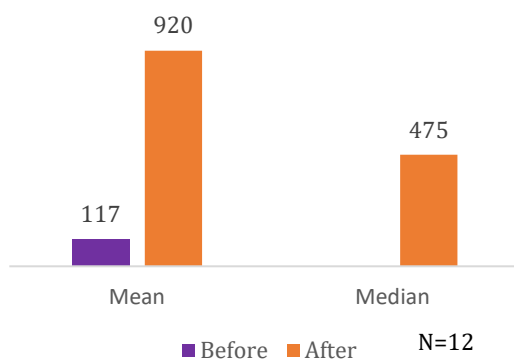
About 9.8% of the surveyed respondents were SHG members who received project support through SHG-based interventions such as support in establishing/ reviving SHGs, **establishing/ expansion of SHG enterprises, training, and establishing bank linkages** (See Figure 11).

Figure 12: SHG Support Areas



The project aimed to empower women through collectivization and livelihood enhancement. As a result of relevant project support, more than half of SHG beneficiaries are getting involved in enterprise activities (See Figure 11) while **less than 14% were involved in any business activity prior to the project**. The project supported business activities undertaken by SHG members including **broom making (19%), pig farming (11%), and poultry (8.1%)**.

Figure 13: Changes in SHG income among SHG Enterprise beneficiaries who are currently earning



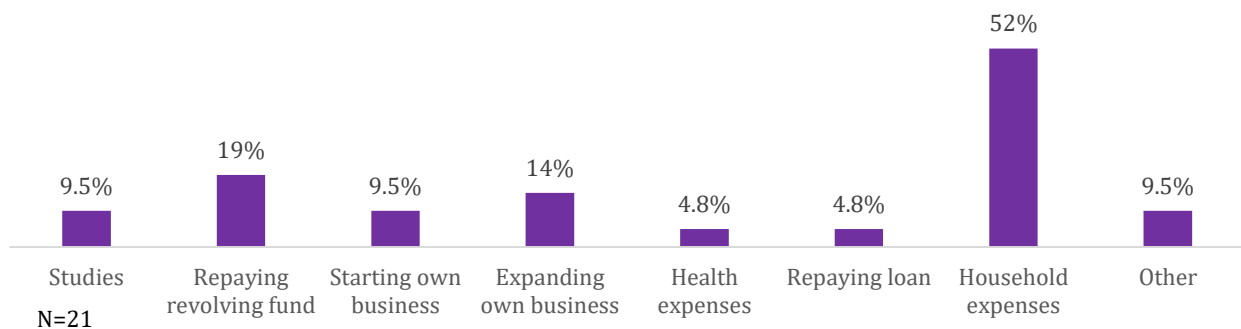
SHG enterprise beneficiaries also reported **87% increase in their mean income (from Rs. 117 to Rs. 920⁸** since project inception. However, qualitative discussions indicated that most of the SHGs, especially those who were involved in broom-making units have discontinued their enterprises in response to high input prices and inadequate profit generation. Nevertheless, the SHG members displayed a strong interest in undertaking other entrepreneurial activities based on their experience from the project.

In terms of day-to-day activities and functioning status, all SHGs are undertaking their regular activities like conducting meetings. Moreover, members reported several benefits of being an SHG member like an increase in personal savings (73%), getting a loan at low-interest rates (76%), income generation (59%), and an increase in confidence (22%).

⁸ Income change is significant at the 0.05 level (2-tailed). It is to be noted here, the income change is calculated only for those SHG members who are earning any income from SHG currently.

Among those who received training, **85% found the training useful** as it helped in improving their awareness of financial management (58%), skills to manage business activities (32%), confidence (53%), and income from business (32%). In addition to developing skills, **more than half of SHG beneficiaries (57%) are also actively involved in loaning activities within their groups** for various purposes but mainly to meet their household expenditures as indicated in Figure 12.

Figure 14: Loans taken for various purposes by SHG members



Furthermore, **86% of the members reported that their savings have increased since the inception of the project** due to reasons like improved saving and repayment behaviour of members due to training and income from business activities undertaken by the members.

Livestock Management

Livestock-based entrepreneurship was a major focus area of the project. The project supported the households through the distribution of piglets and chicks. Furthermore, the project also facilitated access to animal vaccination camps for maintaining livestock health. 30% of the total sampled households received support under livestock management.

Project services for pigs (62%) and poultry (42%) were mainly provided through the project (See Figure 14). One of the primary project intervention distribution of piglets/chicks/fishling to beneficiary households. The project provided 20-25 chicks/ 3 piglets/ 1-5kg fishlings to the beneficiaries. Poultry and piggery farmers also received partial support for animal shelter development wherein they were provided with the construction materials/partial payment for shelter development (See Figure 17).

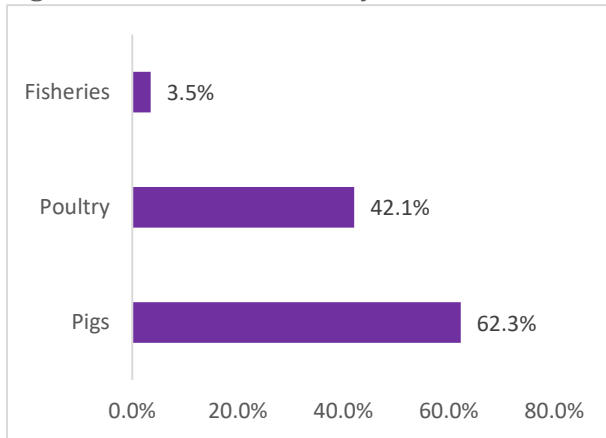
Image 8: Pig pen constructed in Pahamshken village



Image 9: Poultry shed constructed in Pahamshken village



Figure 15: Livestock currently owned and received project support

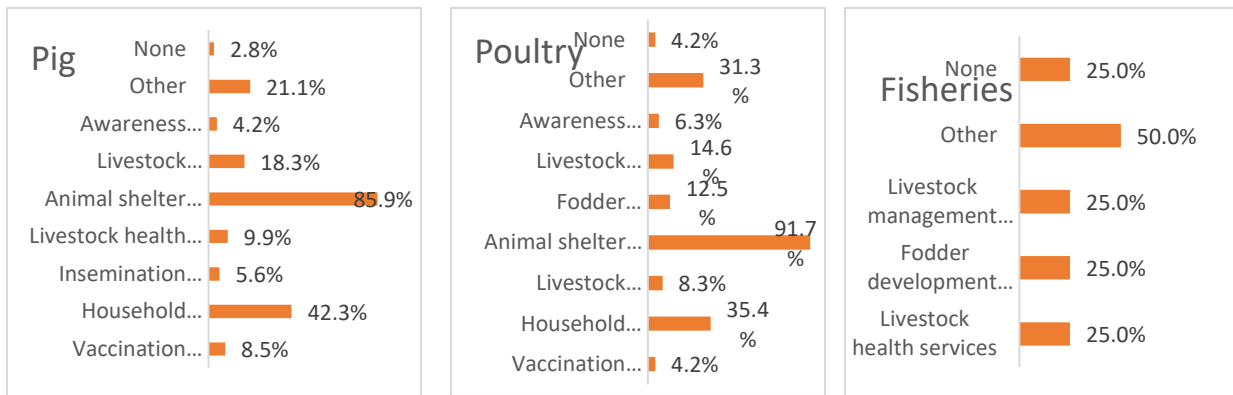


The benefits realized largely involved an increase in income from livestock, an increase in production and an improvement in livestock health. For instance, 41% of poultry owners and 59% of piggery farmers reported an income increase from livestock while 14% of poultry and 17% of pig owners reported an increase in production.

Furthermore, livestock owners reported a **380% increase in their median income from Rs. 250**

to Rs. 1200 (Mean income increased from Rs. 1394 to 3324)⁹.

Figure 16: Project Services accessed by livestock beneficiaries



⁹Income change is significant at the 0.05 level (2-tailed).

Piggery Farm, Pahambirthem

James Maring from Pahambirthem village, used transformed from being a livestock farmer with a single pig to a pig farm owner who **sells around 7-20 piglets each month**. He earns an average of **Rs. 5000 per piglet** and have already sold over 50 piglets in 2022. Currently he has 20-25 piglets in addition to 13 mother pigs at his farm.

He does not hesitate in noting the significant role the project played in his growth as a pig farm owner in such a short period.

“I even used to go for labour work in addition to working on my field. But I no longer do that as the pig farm earns me sufficient income.”

James also proudly adds that he extended his original pig shed into a farm to accommodate the increasing number of pigs. In addition to receiving piglets and financial assistance for pig pen construction, James had also received training in feed management, livestock health care and breeding practices. While the project contributed to his capacity to better manage and earn profits from livestock rearing, it also connected him with institutions such as ICAR and the Rural Resource and Training Centre (RRTC) wherein he could access further training and information regarding livestock management.

James’ experience in livestock management with project support highlights the effectiveness of the project intervention and its potential in enhancing the livelihood of the local community.



4.3.3. Case Study



Market Area Development in Pahamrinai village

Market area development in the Pahamrinai village was one of the notable interventions undertaken with regard to promoting entrepreneurship. Under the project, the local market along the highway was given an uplift in terms of appearance and facilities available. The activities undertaken included footpath creation, roofing, solar lights and wash room facilities.

According to the shopkeepers, each of them are receiving **at least 10-20 more customers daily** since the market area development. In addition to improved outlook of the market, the increase in customers can be attributed to **improved cleanliness as footpaths have reduced the dust**. On the other hand, solar lights installed have made it easier to work during late hours. The solar lights are highly effective especially since the region has poor access to electricity.

While the project also initiated construction of separate washrooms for men and women along with drinking water facility, the construction is yet to be completed.

In a nutshell, the project has facilitated an increase in inflow of customers while enhancing ease of undertaking business in the area.

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. The project also heavily focused on the construction and renovation of sanitation infrastructure at the community and household levels.

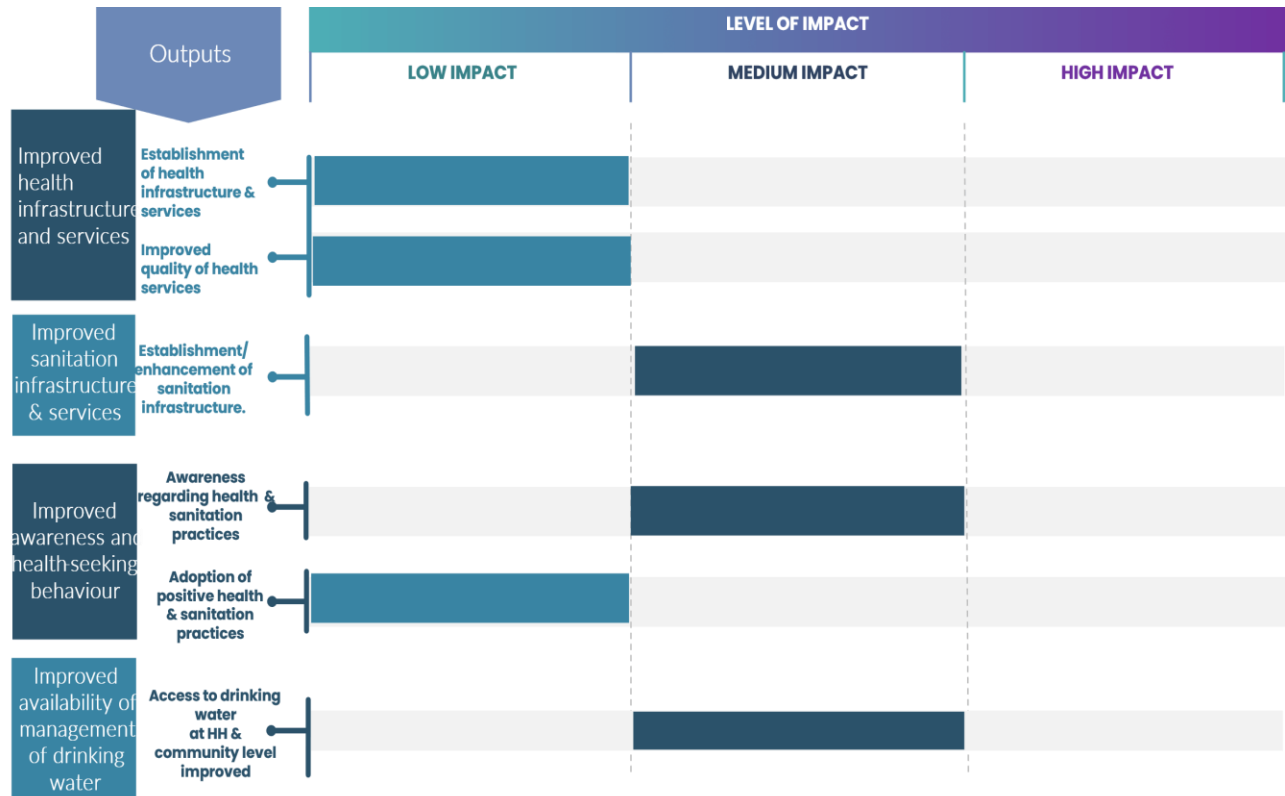
Table 7: Activities under health and sanitation in Meghalaya

Activity Category	Activities
Health	Sensitization and interface program on health issues, Construction and renovation of health centres
Drinking Water Management	Drinking water through community Pond construction/repair, Installation and repair of community taps, piped water from community water tanks and Household water tap installation/repair
Sanitation	Sensitization on hygiene practices, water soak pits, construction and renovation of household and community sanitation units

4.4.1. Effectiveness and Impact

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

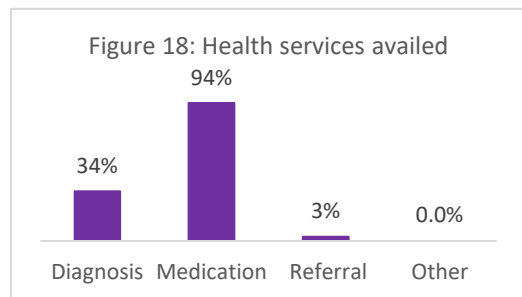
Figure 17: An overview of project effectiveness and impact on health and sanitation



Health infrastructure and services

The programme had a component of

Image 10: Public Health Centre renovated through the project, Pahambirthem village

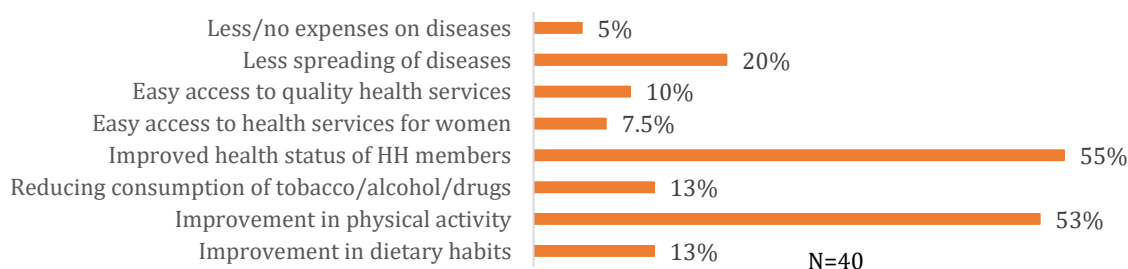


creating awareness around health to increase health-seeking behaviour among the community and prevent the spread of harmful diseases. Local health institutions/ Anganwadi centres were also

renovated in villages for better health services and delivery. **More than 90% of beneficiaries have accessed medication services** at the health clinics considering the absence of other health facilities in the local area. Qualitative interactions indicated a sense of satisfaction among villagers with regard to the services being provided at the health clinics.

The respondents surveyed also stated that they or someone in their household has observed a change in lifestyle after attending the health camps and awareness sessions. **More than half of them saw an improvement in physical activity (52%) and an improvement in health status (55%) of the household members** (See Figure 19).

Figure 19: Perceived life changes due to attending sensitization sessions



Drinking Water Management

While the villages have adequate water sources in the vicinity, accessing the same has been a challenge considering the absence of proper pipe connections and storage facilities. The project hence played a pertinent role in ensuring that the households and the communities can efficiently utilize the water bodies while being able to store sufficient water. Construction of water tanks and providing pipeline connections are saving the villagers, especially women time and effort. About two-

thirds of the sampled households (71%) had benefitted from drinking water interventions through the project.

More than two third of drinking water beneficiaries have benefitted from either piped water through community water tanks or the repair of water taps (68%). **More than 93% reported that their primary source of drinking water has changed since project inception** indicating the relevance and effectiveness of the project support provided in this area. Furthermore, quantitative studies indicated a **349% increase in beneficiaries with access to piped water at home (from 18% to 80%)**. The community also reported a **79% decrease (from 65% to 14%) in dependence on public taps as the main water source of drinking water since project inception**.

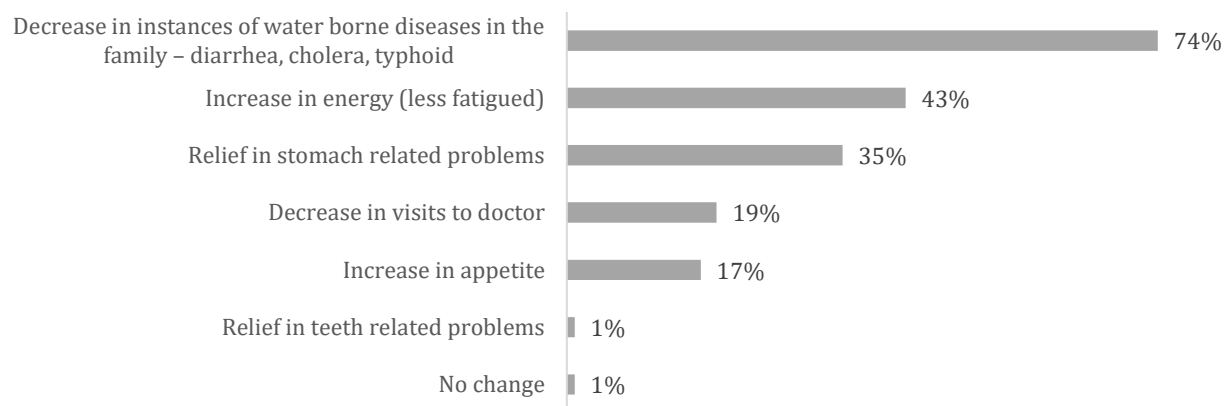
Field observation attests to the fact that the piped water supply is reaching the community and members are pleased with the interventions in drinking water management.

Image 11: Drinking water tank constructed in Pahamshken village

The change in drinking water sources has greatly **decreased instances of waterborne diseases, as reported by 74% of households. They have also reported less fatigue (42%) and relief in stomach-related issues (35%)**. An increase in appetite and decreased visits the doctor has also been seen in some responses. It has **greatly benefitted the women by helping them save time in fetching water (93%) and saving additional effort in fetching water (80%)**.



Figure 20: Changes observed in health due to change in the source of drinking water



Sanitation infrastructure and services

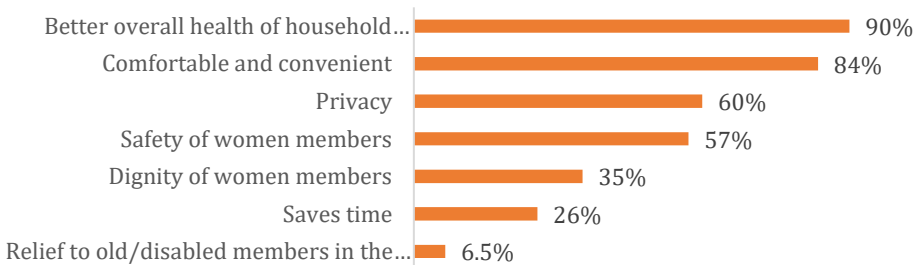
The programme supported the community with sanitation facilities and **65% of the sampled beneficiaries benefitted under this category**. The programme undertook the construction of toilets and soak pits in convergence with Swachh Bharat and community participation (See Table 8). The project provided support mainly through partial payment for the construction of toilets.

Table 8: Sanitation services provided

Sanitation Interventions	% Of beneficiaries accessed (N=108)
Construction of household/ community sanitation units (toilets/bathing enclosures) N=101	94.4%
Household waste water soak pits	3.7%
Other	1.9%
Waste collection services	.9%
Awareness campaigns such as Mobile vans	.9%

The community reported multiple benefits with regard to sanitation interventions, especially with regard to toilets constructed in the region, especially with regard to overall household health (See Figure 21). Qualitative discussions also indicated access to better sanitation infrastructure such as community taps, washing areas and toilets has reduced the spread of malaria in the community.

Figure 21: Benefits of toilets



The community also demonstrated awareness of proper waste disposal mechanisms wherein **68% reported that solid waste should be dumped in closed**

pits after segregation, while 73% believed that liquid waste should be released into soak pits instead of water bodies or open areas.

Image 12 : Garbage Bin Unit in Pahambirthem



Image 13: Household Toilet constructed in Pahamshken village



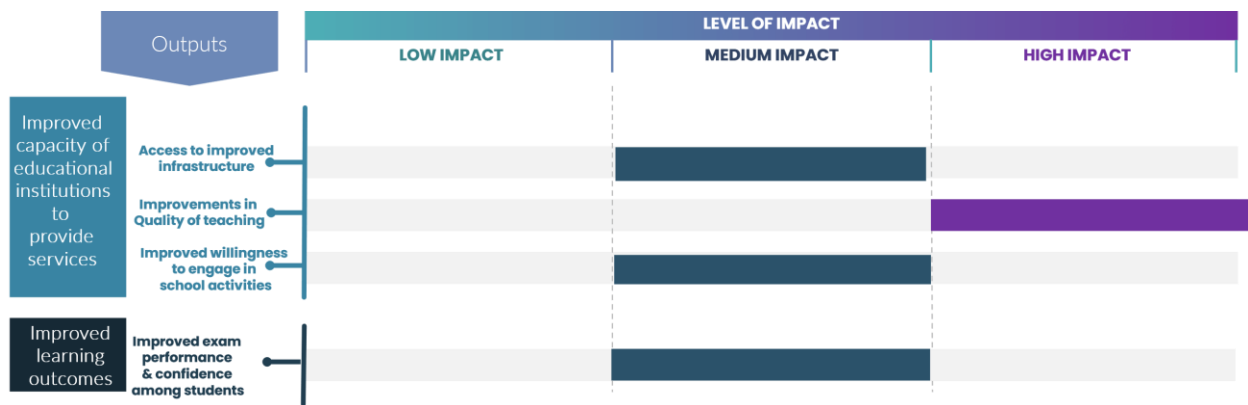
4.5. Promotion of Education

Table 9: Activities under education in Meghalaya

Activity Category	Activities
Educational Institutions Development	Handwash stations, Smart class, BALA, Teaching aids, classroom furniture, separate washrooms for boys and girls, drinking water posts, and school building renovation.
Education Support	Digital Learning Centres, Health and Hygiene sessions for adolescents and Suraksha Education Centres.

4.5.1. Effectiveness and Impact

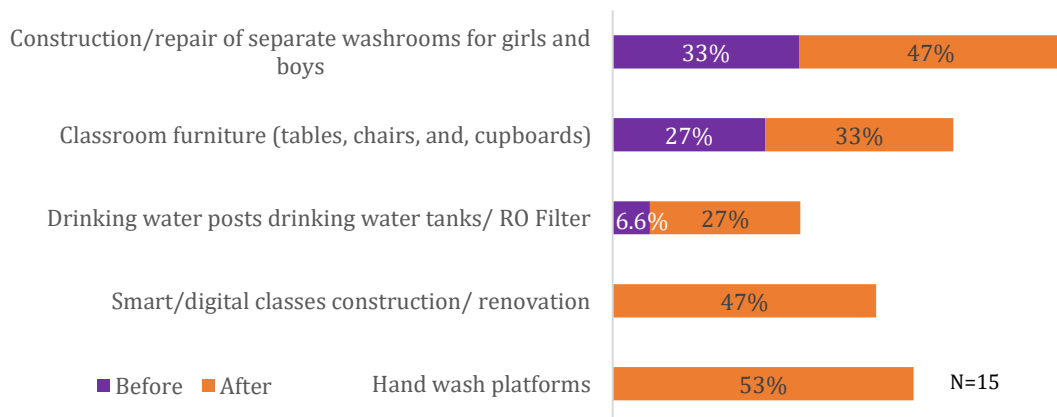
Figure 22: An overview of project effectiveness and impact on Education



Educational Institutions

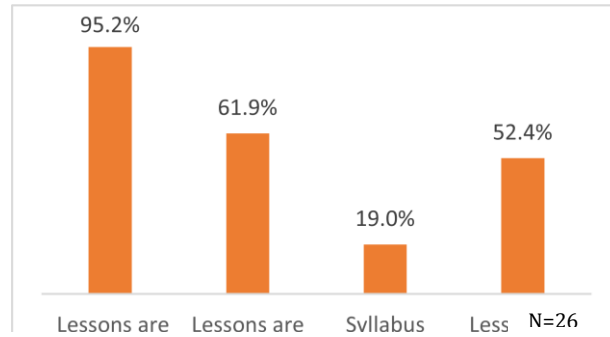
The programme heavily focused on the physical infrastructure development of the village schools. Infrastructure development largely involved the provision of basic furniture, smart-class, separate washrooms for boys and girls, handwash platforms and renovation based on the need of the school.

Figure 23: Infrastructural services available before and after project inception according to the teachers



As highlighted in Figure 25, **none of the schools had access to the handwash platforms and smart class before the project.** Furthermore, **71% of the teachers reported using smart classes every day.** This finding was seconded by the students who reported its usage every day (96%). All students liked learning from the smart class since it made **the lessons more interesting (77%), and easier to understand (88%) and remember (35%)** according to the students. However, qualitative interactions with the school staff revealed that the teachers faced constraints in terms of the skills and knowledge to properly utilize the smart classes. The smart class infrastructure was hence mostly utilized for showing videos and was hardly used otherwise in classes. Additionally, the teachers noted that smart class setup could be put to better use if the schools could access proper and regular electricity supply.

Figure 2: Smart class usage reported by students



With regard to handwash stations also, students reported frequent usage **“92%- always before going to the toilet”, and “77% always before eating food.”** Observations during field interactions demonstrated that the handwash stations were maintained properly and effectively utilized while students also reported an improvement in their health status due to their regular usage. Both the teaching and student communities were highly satisfied with the intervention especially since the schools did not have access to handwash stations before the project. Having access to them in the school compound proves extremely useful especially in the project village schools as almost all of them are primary schools making it difficult to take students to handwash areas outside or nearest to the school compound.

Image 14: Drinking Water Station set up in RCLP School, Pahamshken village, Meghalaya

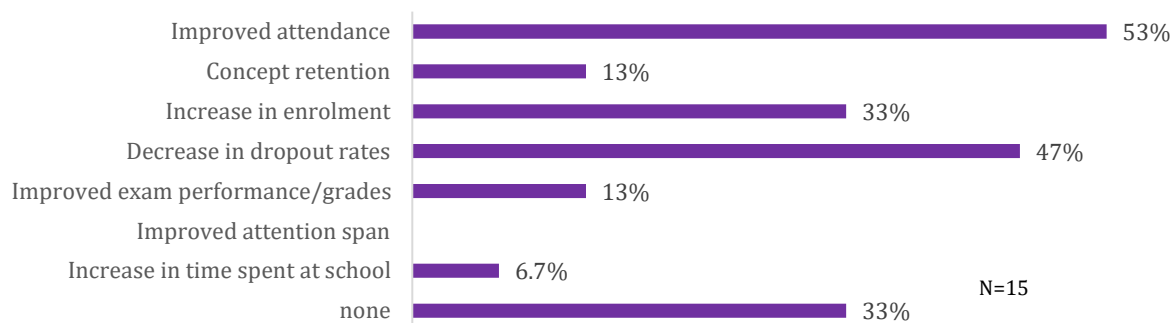


In the case of drinking water posts/tanks, only half the teachers reported them being in working condition. Rather than issues with physical infrastructure, irregular water supply was noticed to be the main issue in the case of drinking water posts. The classroom furniture received under the programme is in working condition as per the findings and has enabled improved capacity to accommodate more students with proper seating facilities.

Appropriate sanitation structures in schools play an imminent role in children’s education and maintaining school attendance. Thus, the students highlighted that **the construction/renovation of toilets in schools has helped them in attending school regularly (87%)** and spending more time at school **(33%)**. 87% of the teachers also reported all washrooms being in good working condition.

In terms of capacity-building support for the teachers, none **of the teachers reported any capacity-building support**. Nevertheless, due to the infrastructural developments that took place under the programme, teachers have observed changes in their students in the form of attendance, enrolment, and dropout rates as can be seen in Figure 26.

Figure 25: Changes observed among students due to infrastructure developments according to the teachers



Education support

Suraksha Education Centres and Digital Learning Centres were two of the main education interventions undertaken to provide educational services to school students and youth in the area. Considering the lack of educational institutions apart from primary schools and Anganwadis and primary schools, setting up Suraksha Education centres and digital learning centres has proved to be a relevant and effective project intervention.

As per the quantitative survey, **69% of the students reported enrolling at Suraksha Education Centres**. This was a completely new intervention and was not accessible prior to the project. **The students reported availing benefits from enrolling at the SECs including improved exam performance (97%), improved confidence to go to school (52%), and improved health and nutrition (6.9%).**

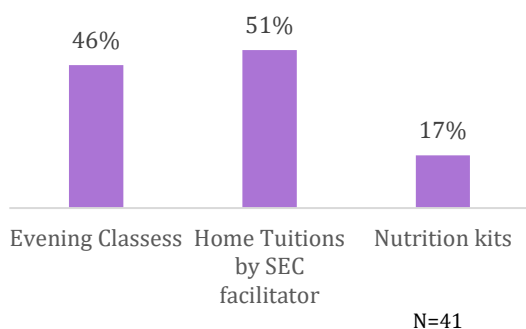


Figure 26: Services availed by the students from the SECs

97% of the students visited the SEC centre daily during the project period. However, as reported by 87% of the teachers, none of them is currently functional as there is no funding available to continue its services post-project implementation

period.

Digital learning centres, on the other hand, benefitted youth in the village mainly those who were able to access affordable IT coaching classes near their villages. The Digital learning centre set up in the nearest Nongpoh town is easily accessible. While the project funding is no longer available, the implementation partner has continued to facilitate its functioning considering the high demand for

the coaching services provided. However, the services are no longer heavily subsidized as project support is not available during the post-implementation period. Scrutiny of available attendance records indicated that the centre is benefitting an average of 130 students every year.

4.5.2. Case Study

Suraksha Education Centre

Project-supported Suraksha Education Centres (SECs) have been functioning in Pahamshken village since 2018. In the short period of 2018-2020, the centre has supported **more than 50 students** according to Ms Meristilla Makri who used to be a teaching volunteer at the centre during the project period.

The centre provided various services such as tuition classes including revision sessions in addition to health supplements and snacks for the students attending the classes. For the younger students, in primary school, story-reading sessions were also undertaken.

The daily sessions were about two hours in duration and helped students in their school performance. The SEC centres were beneficial especially since the households cannot easily access private tuition due to dearth of time, money and availability of services in the local area.

In addition to school going students, the centres also proved to be effective in supporting drop-out students who cannot afford or continue with full time education for a myriad of reasons. While the centre is no longer functional due to lack of adequate funding to continue its services, villagers including parents, students and the teaching volunteers expressed their strong desire in developing a funding mechanism to continue its services considering its effectiveness in supporting the student community of the village.



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 practising the services and practices accessed through the project under farm management.** These are namely adoption of vermicompost, the use of organic fertilizer, farmer clubs, 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 that have been handed over to the farmer groups are being actively used by the farmers. **However, the intervention in the adoption of SRI has not seen many results as most farmers discontinued the practice as fish farming is not suitable for the colder weather and is hence not profitable.** In the case of clean energy solutions, more than 90% of the beneficiaries reported the solar street lights being operational even after the end of the project indicating the sustained impact of the project.

The programme's efforts to ensure a sustainable means of livelihood and income for women and enterprise owners have mostly transformed into positive results and have been appreciated by the community. **Most enterprises supported through market area development are still functioning and benefitting from the intervention.** While SHGs have mostly discontinued project-supported enterprise activities, they have gained the necessary skill set to undertake business activities and are eager to engage in new business activities in the future. Consistent capacity-building efforts could hence reap sustainable project benefits as evident from the case of SHG women.

The sensitization sessions have helped in increasing the community's awareness regarding nutrition and hygiene. **The drinking water tanks are supplying the project's village community with a sustained supply of clean drinking water.** Moreover, VDCs established or supported in the region work toward the maintenance of the sanitation and drinking water structures constructed ensuring community involvement in operationalization and maintenance post-project implementation period.

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 smart classes are still functional and are utilized frequently.** The Anganwadis refurbished have seen more usage by the children and parents. **The Digital Resource Centres and Suraksha education classes have been praised by community members as they helped students improve their marks and they hope for more such interventions in the future as SECs have stopped functioning due to lack of funding.** 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 Meghalaya. Based on our calculation, the HRDI for the studied clusters is presented in the table below.

Table 10: Holistic Rural Development Index for Meghalaya

HRDI Score	NRM		Skill and Livelihood		Health and Sanitation		Education		Overall	
	Baseline	Endline	Base line	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
	0.19	0.24	0.04	0.10	0.03	0.09	0.04	0.09	0.3	0.51
% Change	26%		150%		200%		125%		70%	

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 Meghalaya, 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 **0.51** indicating a **notable positive change toward the desired impact** from the baseline score of 0.3.

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 Ri Bhoi district, Meghalaya, the major focus areas for intervention were Sanitation, Healthcare & Hygiene, Skill Development & Livelihood Enhancement, Promotion of Education, and Natural Resource Management (NRM).**

The project interventions have been **effective in facilitating the collectivization of farmers through farmer clubs and the establishment of agriculture resource centres. Consequently, farmers have gained easy access to affordable machinery and a platform to discuss and learn from peers and experts when required.** Considering the nature of the intervention and the discontinuation of innovative techniques such as SRI and fish cum paddy farming (low returns due to adverse weather conditions) have translated into low impact on farm income through the project. However, the project has positively influenced the awareness levels while improving the capacity to undertake practices such as vermicomposting, usage of green nets etc. The project also brought about changes in facilitating access to clean energy solutions, especially solar lights.

Skill and livelihood enhancement activities also have opened up economic opportunities for livestock farmers and women in the community. These beneficiary categories, who otherwise have limited access to economic opportunities have benefitted from the project by gaining the skills, technical support, and capital to undertake and expand entrepreneurial activities during the project period. While SHG enterprises have not been able to continue their enterprise activities due to limited profit generation, the members are demonstrating high motivation and potential in undertaking and expanding entrepreneurial activities in the future leveraging the skills and experience they gained through the project. The support provided through livestock birds, piglets, 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.

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 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 at Suraksha Education Centres and IT skills development through Digital Resource Centres.** 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

- Farm Management techniques with better feasibility and suitability with regard to the weather conditions can be promoted to ensure sustained impact.
- More structures like seed banks need to be constructed to cater to the needs of the entire village population.
- Enhancing the project scope to include interventions aimed at enhancing productivity and crop diversification could lead to notable results in farm income generation.
- Activities such as poly houses can be undertaken in corporation with existing community groups such as Farmer Clubs and SHGs for sustained adoption and maintenance.

Promotion of Education

- Capacitating the school teachers and staff in operating smart classes.
- Support for community management of coaching classes through Suraksha Education Centres.
- 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

- Further enhancing the project's scope to focus on capacity building and awareness generation regarding health and sanitation could have directly improved health conditions. Conducting more sensitization programmes on health issues and supporting the government's health infrastructure will support the community in improving health.

Skill Training and Livelihood Enhancement

- Handholding support to enterprises so they have marketing tie-up, business plan development, 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, improved breeding practices for livestock owners and adequate support for scaling up production.

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 tests);

S_e = margin of error, set at 5%;

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

Thus, the estimated maximum sample size is 400.

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

Stage 2- Sampling for villages:

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

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 Interviews (IDI) and Focus group discussions (FGD) were administered for obtaining information about the remaining themes as well as to enrich the household survey information with a deeper understanding.

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

6.2. 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 is demonstrated below:

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

6.3. HRDI Methodology

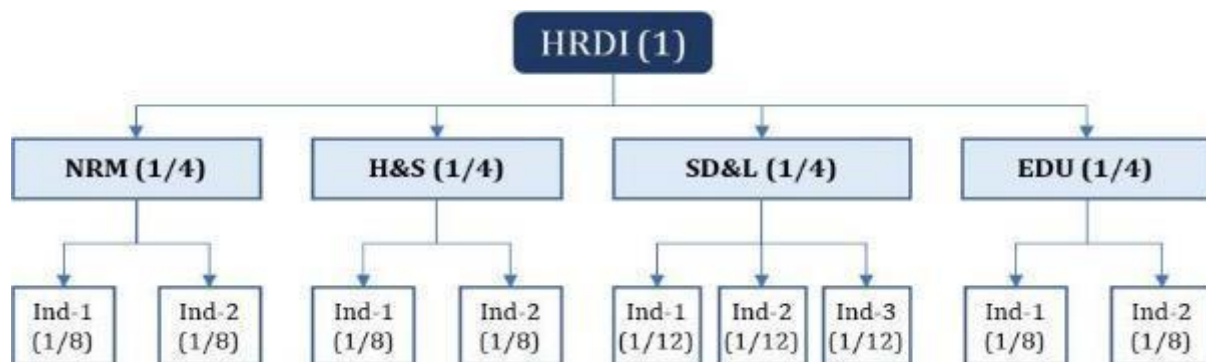
The outcome indicators included in the HRDI were obtained from different domains and are consequently measured on different scales. Therefore, to ensure the comparability of these indicators, all the indicators were converted into discrete variables such that the indicators could be measured between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

Indicator Weights

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

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

Domain and indicator weights¹⁰



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	Percentage of households with improved skills in Agriculture (green nets, timely application of fertilizers and pesticides)	$(1/4) \times (1/1) = 0.25$
Health and Sanitation	Percentage of households with piped water connection for drinking water	$(1/4) \times (1/3) = 0.083$
	Percentage of households practising proper solid waste management	$(1/4) \times (1/3) = 0.083$
	Percentage of households with increased soak pits utilization	$(1/4) \times (1/3) = 0.083$
Livelihoods and Skill development	Percentage of members reporting entrepreneurial activities undertaken by SHGs	$(1/4) \times (1/3) = 0.083$
	The proportion of livestock owners with income above the median	$(1/4) \times (1/3) = 0.083$

¹⁰ NRM: Natural Resource Management | H&S: Health and Sanitation | SD&L: Skill Development and Livelihoods | EDU: Education

<i>Education</i>	The proportion of SHG women with income from enterprise above the median	$(1/4) \times (1/3) = 0.083$
	Percentage of teachers reporting increased access to educational services/ infrastructure such as SECs and smart classes.	$(1/4) \times (1/2) = 0.125$
	Percentage of teachers reporting increased access to school physical infrastructure (washrooms, drinking water, etc)	$(1/4) \times (1/2) = 0.125$

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

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

Method to calculate HRDI

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

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

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

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

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

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

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

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

Domain	Indicators	Baseline	HRDI	End line	HRDI	% Change
NRM	Percentage of households with improved skills in Agriculture (green nets, timely application of fertilizers and pesticides)	0.77	0.19	0.94	0.24	26%
H&S	Percentage of households with piped water connection for drinking water	0.18	0.03	0.8	0.09	200%
H&S	Percentage of households practising proper solid waste management	0.13		0.17		
H&S	Percentage of households with increased soak pits utilization	0.09		0.1		
Skill	Percentage of members reporting entrepreneurial activities undertaken by SHGs	0.14	0.04	0.59	0.1	150%
Skill	The proportion of livestock owners with income above the median	0.24		0.46		
Skill	The proportion of SHG women with income from enterprise above the median	0.06		0.16		
ED	Percentage of teachers reporting increased access to educational services/ infrastructure such as SECs and smart classes.	0.2	0.04	0.4	0.09	125%
ED	Percentage of teachers reporting increased access to school physical infrastructure (washrooms, drinking water, etc)	0.12		0.32		
Total		0.3		0.52		70%

6.4. Overview of Impact Calculation

Table 11: An overview of the project impact¹¹

Goal: Effective utilization of local resources and adequate access to water for various purposes				
Outputs	Output Indicators		Output Avg	Impact level

¹¹ 100%-70% - High impact; 40%-70%- Medium impact, <40% - Low impact

NC. Increased use of clean energy solutions				
NC1.Adoption of clean energy infrastructure	NC1 (a) Proportion of HHs using clean energy infrastructure (Base=all)	65%	82%	High
	NC1. (b)Proportion of households reporting benefits from using clean energy infrastructure (Base=clean energy beneficiaries)	98%		
SA. Improved access to agricultural training and services				
S.A.1 Access to Agriculture training and services	SA.i(a) Proportion of farmers who reported project training services are useful	88%	92%	High
	SA.i(b) Proportion of farmers who demonstrate awareness regarding sustainable farming practices	96%		
S.A.2.Adoption of improved farming practices	SA.ii(a) Proportion of farmers who adopt scientific agricultural practices	94%	94%	High
SB. Economic empowerment through collectivization (Only for SHG members)				
SB.1 Formation/ revival of SHG-based Enterprises	SB.i(a) Proportion of members who received support with establishing/reviving SHGs	11%	57%	Medium
	SB.i(b) Proportion of members who received support with establishing/reviving SHG enterprises	59%		
	SB.i(b) Proportion of members whose SHGs are currently functioning	100%		
SB.2 Development of entrepreneurship	SB.ii(a) Proportion of SHG members who received training	54%	59%	Medium
	SB.ii(b) Proportion of SHG members undertaking entrepreneurial activities	43%		
	SB.ii(c) Proportion of SHG members reporting starting new SHG enterprises	46%		
	SB.ii(d)Proportion of SHGs with increased savings	86%		
	SB.ii(e) Proportion of SHG members reporting improved income	65%		
SC. Enhanced capacity for regular income generation				
SC.1 Enhanced employable skill development	SC.1(a) Percentage of youth who accessed skill development training	53%	38%	Low
	SC.1(b) Percentage of youth who report improved income through skill development	22%		
SC.2 Access to self-employment and entrepreneurial opportunities	SC.2(a) Proportion of beneficiaries who established/expanded entrepreneurial activities	25%	31%	Low
	SC.2(b) Proportion of beneficiaries reporting improved capacity to undertake entrepreneurial activities	25%		
	SC.2(c) Proportion of beneficiary HHs reporting increase in income	42%		
SD. Improved capacity to generate income through livestock management				

SD.1 Adoption of scientific management of livestock	SD.i (a) Proportion of beneficiaries who received support in livestock management services	30%	66%	Medium
	SD.i(b) Proportion of beneficiaries reporting an increase in income from livestock management	81%		
	SD.i(c) Proportion of beneficiaries reporting improved livestock health	15%		
	SD.i(d) Proportionate increase in average income from livestock	138%		
H.A. Improved health infrastructure and services				
H.A.1 Establishment/enhancement of health infrastructure and services	H.A.i(a) Proportion of beneficiaries who gained access to health services	11%	38%	Low
	H.A. i(b) Proportion of beneficiaries reporting lifestyle changes due to improved access	100%		
	H.A.i(c) Proportion of beneficiaries who consulted medical references from camps	3%		
H.A.2. Improved quality of health services	H.A.ii(a) Increase in no. of beneficiaries reporting improved quality of available services	10%	10%	Low
H.B. Improved sanitation infrastructure and services				
HB.1 Establishment/enhancement of sanitation infrastructure.	H.B.i(a) Proportion of beneficiaries who gained access to sanitation services	65%	58%	Medium
	H.B.i(c) Proportion of beneficiaries reporting benefits due to improved access	51%		
H.D Improved awareness and health-seeking behaviour				
H.D.1 Awareness regarding health and sanitation practices	H.D.i (a) Improved dietary practices/reduced tobacco consumption/improved physical exercise	26%	46%	Medium
	H.D.i(b) Improved awareness regarding cleanliness and sanitation practices	92%		
	H.D.i(c) Improved awareness regarding waste management	20%		
H.D.2 Adoption of positive health and sanitation practices	H.D.ii(a) Increase in no of HHs demonstrating the adoption of WASH practices	0%	13%	Low
	H.D.ii(b) Increase in no. of HHs adopting proper solid waste management practices	28%		
	H.D.ii(c) Increase in no of HHs adopting proper liquid waste management practices	11%		
H.E. Improved availability and management of water				
H.E.1. Access to drinking water at household and community levels improved	NB.1.(a) Proportionate increase in the average number of months with access to clean drinking water	0%	50%	Medium
	NB.1.(b) Proportion of households reporting improved well-being due to availability of clean drinking water.	99%		

Outcome E.A. Improved capacity of educational institutions to provide services				
EA.1 Access to improved physical infrastructure	EA.i(a) Proportion of students/schools who report gaining access to functioning smart classrooms/BaLa/science labs/libraries/learning aid/furniture/sports equipment	32%		Medium
	EA.i(b) Proportion of schools who gained access to clean and functioning sanitation units/drinking water posts at education institutions	40%		
	EA.i(c) Proportion of schools reporting regular maintenance of smart classrooms/sanitation units/science labs/drinking water units/sports infra/others	99%	57%	
EA.2 Improvements in quality of teaching	EA.ii(a) Proportion of teachers regularly utilising smart classrooms/libraries/smart class	75%		High
	EA.ii(b) Proportion of students who prefer/regularly use smart classrooms/science labs/ libraries for lessons	100%		
	EA.ii(c) Proportion of parents/students/teachers who report improvements in teaching quality	64%	80%	
EA.3. Improved willingness to engage in school activities	EA.iii(a) Teachers reporting improvements in attendance due to improved infrastructure	53%		Medium
	EA.iii(b) Proportion of teachers reporting an increase in enrolment post infrastructure development	33%		
	EA.iii(c) Proportion of institutions reporting a decrease in dropout rates	47%	44%	
Outcome E.B. Improved learning outcomes				
EB.1 Improved exam performance and subject confidence among students	EB.i(a) Proportion of students who gained access to coaching classes	69%		Medium
	EB.i(b) Proportion of students who report improvements in access to reference material	9%		
	EB.i(c) Proportion of students reporting an increase in confidence in various subjects (lessons are easy to understand, more interesting etc.)	55%		
	EB.i(e) Proportion of teachers reporting improvements in learning outcomes due to infrastructural facilities at institutions (concept retention, attention span and exam performance)	67%	50%	
