

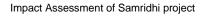
Impact Assessment of Samridhi project

Pernod Ricard India Private Limited

June 2024

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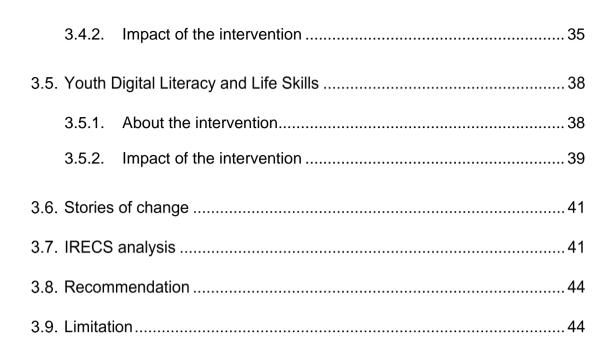
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List of Acronyms

Acronyms	Full Form
CSR	Corporate Social Responsibility
FGD	Focus Group Discussion
IDI	In-depth Interview
INR	Indian Rupee
IRECS	Inclusiveness, Relevance, Effectiveness, Convergence and Sustainability
KII	Key Informant Interview
KPI	Key Performance Indicator
KVK	Krishi Vigyan Kendra
LoE	Letter of Engagement
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
MoU	Memorandum of Understanding
OBC	Other Backward Class
PoP	Package of Practices
PRI	Panchayati Raj Institutions
PRIF	Pernod Ricard India Foundation
PRIPL	Pernod Ricard India Private Limited
PW	Price Waterhouse
SC	Scheduled Caste
SDG	Sustainable Development Goals
SHG	Self Help Group
ST	Scheduled Tribe
VDC	Village Development Committee

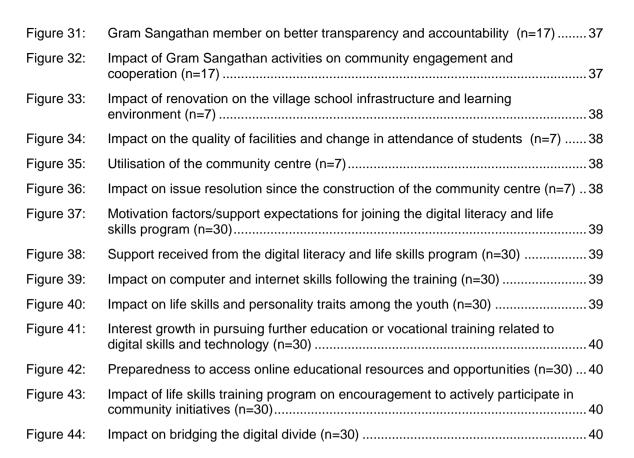


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Executive Summary

Pernod Ricard India Private Limited (PRIPL) has undertaken various initiatives for communities within and around their operational areas. PRIPL commissioned PW to conduct an **impact assessment of their CSR project 'SAMRIDHI' to evaluate its effects on local communities from 2019 to 2022**.

The assessment involved understanding the project implementation plan and reviewing Key Performance Indicators (KPIs) established by management to measure project outputs, outcomes, and impact. The evaluation framework, known as the Inclusiveness, Relevance, Efficiency, Convergence, and Sustainability (IRECS) framework, was agreed upon with management. The study aimed to evaluate outcomes and impacts on project stakeholders and provide recommendations for management's assessment. A mixed-method approach was employed, with planned interactions with key stakeholders based on the study methodology.

Pernod Ricard India Private Limited (PRIPL) initiated the project with the objective of promoting water conservation measures and improving farm livelihoods among the local communities in January 2019 with the support of its implementing partner SM Sehgal Foundation. The project was carried out in two phases and benefited a total of 2,557 people in six villages spanning Behror and Neemrana blocks of Alwar district. In addition to water conservation management and livelihood, the project also focused on the subjects of fostering digital literacy and life skills among local youth and the establishment of community institutions. Through the project, PRIPL and the SM Sehgal Foundation were able to build several ponds, nala bunds, and farm bunds to boost rainfall storage. In addition, over 100 farmers received Agri-inputs and were trained on the Millet and Mustard Package of Practices (PoP). The project trained local youth in digital literacy and life skills. The project has also carried out renovation of government secondary school and construction of community centre in Karoda village.

During the impact assessment study, **247 project beneficiaries were surveyed, and qualitative interactions were held with 17 key project stakeholders.**

Key findings:

Water conservation and management

The activities of the intervention included **construction of surface water storage and ground water recharge structures**, **wastewater structures**, **promotion of water efficiency in agriculture**, **within the village at community level & individual level as well to improve the ground water recharge level**. The beneficiaries of this intervention **were provided with mini drip sprinklers**, **laser levelling and farm bunding on their fields**. 108 respondents out of the total sample size of 247 reported that they have received project support along this theme.

- 59% (n=108) of the respondents were satisfied with the accessibility and availability of water resources since the implementation of all these projects.
- 43% (n=108) of the respondents believe that the groundwater recharge structures had a positive impact on the availability of water for their agricultural needs. This has helped the respondents to increase their number of irrigations from 5 to 7 in a year.
- The surface water storage capacity or the ponds constructed are filled up by rainfall water and come handy for the locals. Since, the ponds depend on the rainfall, the water dries up in other seasons. Cumulatively only 30% (n=108) of the respondents were able to utilise the stored water from these ponds due to the ponds drying up. This was reaffirmed during discussions with the respondents that the rainfall has been very low in the last 3 years due to which these ponds have dried up.
- Only 18% (n=108) i.e., 20 respondents were aware of the soak wells and majority of these respondents were the ones who were living in proximity to soak wells. 75% (n=20) i.e., 15 of the respondents believe

that soak wells have reduced the wastewater on the streets and have led to significant improvement in village sanitation.

- 56% (n=108) respondents had received the support and had active mini sprinklers installed in their farms for irrigation. The mini sprinklers have been very successful in impacting the efficiency of water use during irrigation. 98% (n=60) of the respondents believe that overall water use has become significantly efficient due to adoption of mini drip sprinklers for their farming. Adoption of mini sprinklers has helped the respondents reduce the time and effort required for irrigating their land. The average time required for irrigating 1 acre of land has reduced from 16 hours (in case of flood irrigation) to around 6 hours for mini sprinklers.
- Increased access to water for irrigation has helped the respondents to dedicate more land to wheat cultivation (which happens to be their staple food) instead of mustard and gram as wheat requires 2-3 more irrigations in comparison to mustard and gram.
- 55% (n=108) of the respondents have received the laser levelling support for their farms. 85% (n=59) of the respondents believe that **their land preparation and irrigation practice is highly efficient now due to the impact of the laser levelling intervention on their field.**

Agricultural Practices

Under the agricultural practice intervention activities like Package of Practices (PoP) demonstrations, providing Package of Practices (PoP) input, soil testing, field days, workshops and composting demonstration was done for the farmers to improve soil nutrition and best farming practices. The respondents have been provided with PoP inputs consisting of essential micro- and macronutrients, correct quality and quantities of chemicals, high-yielding varieties, or hybrid seeds. 152 respondents out of the total sample size of 247 reported that they have received project support under this activity.

- 92% (n=152) of the respondents have attended the PoP demonstration, workshops, and field days and received the PoP inputs. 89% (n=140) of the respondents felt that **basic training was provided to them** whereas 11% (n=140) of the respondents felt that expert training with ongoing support **was provided for implementing the learnings from the PoP demonstrations, workshops, and field days.**
- 70% (n=140) of the respondents had **implemented the learnings to some extent** with gradual implementation whereas 30% (n=140) of the respondents had extensively and immediately applied the learnings from these demonstrations on their fields
- The average yield of Kharif crops, millet and cotton per acre (in quintals) saw 24% and 27% rise whereas the average yield of Rabi crops, mustard and wheat per acre (in quintals) saw 24% and 15% rise respectively for the respondents.
- The average annual income from agriculture derived from the data shows that there has been a 27% increase for the farmers.
- 34% (n=152) of the respondents reported of attending composting demonstrations. Respondents stated that **they have actively started using the organic fertiliser produced from composting**. 64% (n=52) of the respondents reported of engaging in composting activities at least once or twice per month whereas 17% (n=52) of the respondents engaged more than three times per month. This has also allowed the respondents to **reduce their cost of cultivation** as they have to purchase lesser amount of external inputs which is depicted in Table 6 in the findings section.

Gram Sangathan and Capacity Building

During the intervention, the Gram Sangathan, also known as the Village Development Committee, was established in every village. Social leaders, panchayat members, progressive farmers, and people chosen from all facets of the society made up the Sangathan. The Sangathan members' major role was to engage in decision making, planning, and implementing the projects, which included assisting in the identification of strategic locations for construction work, beneficiary selection and collection of community contribution. The capacity building training was done on various fronts to have optimum

functioning of the Sangathan. 17 respondents out of the total sample size of 247 reported that they were part of the Gram Sangathan promoted under the project.

- 71% (n=17) of the respondents believe that they have observed significant improvement in decision making and planning while 29% (n=17) believe that there has been slight improvement.
- 71% (n= 17) respondents believed that training had positively impacted in selection of project beneficiaries and project sites for construction of water infrastructures. 65% (n=17) of the respondents believe that the Sangathan was effective in safeguarding and maintaining the structures build during the project. It was also reported by few of the Gram Sangathan members that there was preference given to certain individuals by the Sangathan while choosing the project beneficiaries.
- 82% (n=17) of the respondents reported that the women members of Gram Sangathan were trained on health, hygiene, and nutrition. 76% (n=17) of the respondents saw some improvement in the health and wellbeing of women members of Gram Sangathan due to the training sessions.
- 88% (n=17) of the respondents believe that the Gram Sangathan members are now better equipped to access and utilize government resources and support for village development. 71% (n= 17) of the respondents have witnessed an increase in the community cohesion and cooperation due to activities of Gram Sangathan.
- Overall, it was reported by respondents that the Gram Sangathan has been efficient on all fronts but
 when asked about improvement areas for future, the respondents shared about the exhaustion of
 community funds which has resulted in reduction of interest of the Sangathan members. The
 members and community's involvement has also reduced now.

Youth Digital Literacy and Life Skills

This intervention focused on empowering the youth through Digital Literacy and Life Skills Education. The intervention had **6-month long sessions with activities focusing on improvement of computer skills, increasing self-confidence, improving awareness related to career and goals etc.** 30 of the respondents shared that they have been part of these trainings.

- 60% (n=30) of the respondents reported that there has been **significant increase in their computer and internet skills** whereas 40% (n=30) saw a slight increase in these skills.
- 77% (n=30) of the respondents believe that they saw **some development in their life skills and personality traits.** 20% (n=30) believe they saw significant development in their life skills and personality traits.
- 70% (n=30) of the youth beneficiary has interest towards pursuing education or vocational training in the field of digital skills and technology. 77% (n=30) of the respondents feel they are somewhat better prepared whereas 17% (n=30) were much better prepared to access the online education resources and opportunities.
- 87% (n=30) of the respondents believe that the intervention has contributed to narrowing the digital divide for the youth in the school.

Key Recommendations:

Capacity building of farmers on adopting natural farming/ regenerative agriculture techniques

The farmers in Behror lack technical knowledge in agriculture. Initiatives like farm field schools, seed trials can provide practical training of various resource saving practices. The community support can create an effective extension model. Diverse farming systems like agroforestry can be promising to enrich soil health and productivity.

Ensure access to quality and affordable agri-inputs

Local communities face challenges in accessing quality seeds and agricultural inputs affecting crop yields. High demand leads to inflated prices post sowing, further complicating procurement for farmers. Promoting individual or collective entrepreneurship can bridge this gap, fostering sustainable social enterprises. By identifying and training local youth in agri entrepreneurship, micro or small enterprises focused on seed breeding and trading, nurseries can emerge ensuring farmers have access to quality inputs at the local level.

Introduce drought resistant crops varieties among local farmers

In arid regions like Behror selecting drought resistant crop varieties can reduce irrigation needs. Partnering with local Krishi Vigyan Kendra (KVK) the project team can conduct seed trails to identify optimal varieties. This approach will conserve water and strengthens resilience against crop failure

Provide value addition and marketing support through promotion of collective marketing model

Currently most marginal farmers rely on local traders for selling their produce due to transportation constraints. Establishing a Farmer Producer Company focused on primary value addition will enable farmers to secure better prices. Processing infrastructure especially for millets and mustard oil will empower communities to produce value added products and sell directly to buyers or wholesalers

Promote off-farm and non-farm-based livelihood activities to diversify the income sources available to farmers

In challenging landscapes like Maharajawas, encourage alternative livelihoods such as livestock rearing or handicrafts by assisting the local communities through capacity building and marketing support. Financial aid for livestock purchase coupled with seeds of drought resistant fodder will reduce reliance on farming and promote resilience.

Tailor youth interventions based on the local needs of the students

Aligning the youth training programs with the aspirations of the youth will enhance program effectiveness. Tailored coaching for competitive exams and addressing specific educational needs will boost the relevance and impact of the program.

A detailed analysis of the assessed impact of all the interventions can be found in the <u>Detailed findings and recommendations</u> section, and recommendations can be found in the section titled <u>Recommendations</u> in the report.





1. Introduction and background

1.1. About PRIPL

Pernod Ricard India Private Limited (PRIPL) is a leading multinational alcohol beverage company that delivers quality products to its consumers across the country. As an industry leader, it is known for promoting safe and responsible alcohol consumption. To drive its commitment to the cause of Corporate Social Responsibility near its operations and beyond, in areas of special needs, Pernod Ricard India Foundation (PRIF) was formed as a Section 8 Company incorporated under the Companies Act, 2013. PRIPL aims to drive sustainable solutions to address social, economic & environment sustainability while partnering in India's development initiatives.

Through the CSR initiatives, PRIPL aims to address social, economic, and environment sustainability by:

- Delivering on corporate social commitments
- Partnering in India's development initiatives
- Aligning CSR initiatives more closely with our core business

Over the years, the CSR Foundation of PRIPL has worked across several themes as illustrated in the figure. With a strong Plant-based focused approach, PRIPL is actively working with more than 3.6 million people from communities near 22 Plant locations across 22 states in India through 285 programs¹. All these programs are designed in a manner that they can contribute towards the SDGs and national priorities².

Figure 1: Key CSR focus areas

Water, Agriculture, Livelihoods: Clean Drinking Water, Water resource management & sustainable agriculture practices

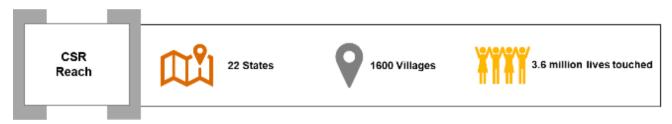
Quality Healthcare: Quality Primary Healthcare, Support to hospitals and communities

Quality education & Skilled Workforce: Reducing Classroom Hunger and School Dropouts, Digital literacy for youth

Water, Sanitation & Hygiene

Environment and Biodiversity Preservation

Transformative Good Governance



1.2. About the project

Behror is an important area for Pernod Ricard with the presence of its distillery unit. PRIPL has been working with the local communities of Behror and identified the need to enhancing local livelihoods by creating access to natural resources and building capacities around sustainable agriculture in addition to providing the necessary handholding support to effectively use the resources and infrastructure.

PRIPL, with the support of SM Sehgal Foundation implemented the SAMRIDHI project in Behror block (and parts of Neemrana block) with the objective of promoting groundwater storage and recharge and improving farm livelihoods among the local communities. The project was implemented between January 2019-March 2022 in 2 phases and covered a total of 2,557 beneficiaries in 6 villages across Behror and Neemrana blocks. In addition to natural resource management and livelihood, the project also focused upon the themes of promoting digital literacy & life skills among local youth and formation of community institutions (Gram Sangathan). Through the project, PRIPL and SM Sehgal Foundation managed to create several ponds, nala bunds, farm bunds for ensuring increased storage of rainwater. Also, more than 100 farmers were provided with Agri-inputs and trained on Millet and Mustard Package of Practices (PoP). The project also worked on capacitating 76 local youth by providing them with training on digital literacy and life skills.

www.prifoundation.com

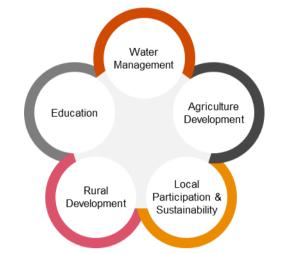
² https://www.pernod-ricard.com/en/locations/india

1.3. About the implementing agency

S M Sehgal Foundation (Sehgal Foundation) is a public, charitable trust that has been working since 1999 to improve the quality of life of the rural communities in India. Sehgal Foundation has a skilled and dedicated team that creates sustainable programs to address rural India's most pressing needs. It works towards strengthening community-led development initiatives to achieve positive social, economic, and environmental change across rural India. The major focus areas of SM Sehgal Foundation are illustrated in figure 2.

SM Sehgal Foundation has been working in 2061 villages across 12 states of India and has covered 2.8 million people through its interventions³.

Figure 2: Key focus areas of SM Sehgal Foundation





https://www.smsfoundation.org/about-us/ (retrieved on 03.11.2023





2. Approach and methodology

2.1. Scope of work

Pernod Ricard India Private Limited (PRIPL) engaged PW to carry out the impact assessment of their CSR projects with a purpose to evaluate the impact created on the community during the project period of 2018 to 2022. The scope of work includes reviewing the Key performance indicators (KPIs) as defined by the Management under the framework for implementing the CSR project for the outputs, outcomes, and impact of the Project. Inclusiveness, Relevance, Efficiency, Convergence, and Sustainability framework (the 'IRECS') (defined later) as agreed with the Management was used.

The assessment was undertaken using the quantitative and qualitative methods to understand the interventions undertaken under its CSR initiative in mutual discussion with PRIPL. As per the engagement letter signed with PRIPL, the scope of work involved conducting the desk review of the project documents, mapping of key project stakeholders, developing research methodology & impact map, data collection & analysis and report writing.

2.2. IRECS Framework

The impact of the programme was assessed using the IRECS framework. IRECS is geared to provide overall feedback on the efficacy of implementation as well, as its efficiency in terms of achievement of the desired project outputs with reference to inputs. IRECS framework measured the performance of programme on five parameters – Inclusiveness, Relevance, Effectiveness, Convergence and Sustainability.

Overview of areas assessed under each of these five parameters is provided below:

Inclusiveness - Ability of different stakeholders, particularly poorest and most marginalised - to access the benefits of activities, be part of institutions (healthcare / education committees) and derive equitable benefits from assets created.



Relevance - Are the services /inputs /institutions facilitated in the project able to meet community priorities? How was the planning done? Was it participatory? How were the success indicators developed? Was the community involved in development of project indicators?

Effectiveness (& Efficiency) - Have the activities been able to effectively address community expectations? How efficiently have the resources been deployed, monitored and utilized?

Convergence - Degree of convergence with government/other partnerships; relationship between individuals, community, institutions, and other stakeholders.

Sustainability - Do communities feel ownership over the assets created by the activities and/or will the Project initiated community interventions sustain even after the exit of the funding agency. Are the institutions strengthened adequately to effectively manage and sustain the activities after the completion of project? Has an exit strategy been drafted?

2.3. Overall methodology

Team has adopted a **coherent and integrated approach** to deliver the scope of work of the engagement. The following **4-stage approach** ensured that impact assessment study was carried in systematic and consultative manner:

Inception and Desk review

- · Inception meeting and engagement kick off with the PRIPL team
- · Building consensus on scope of work, understanding PRIPL's expectations
- Getting a deeper understanding of the projects basis discussion with the PRIPL team
- · Desk review of documents and reports related to the project received from PRIPL
- Stakeholder mapping

Planning and tool preparation

- · Finalising the data collection plan in consultation with the PRIPL team.
- Finalising key indicators as per the finalized stakeholders for impact assessment in consultation with PRIPL
- · Developing data collection tools
- · Digitization of the developed tools
- · Communicating the data collection plan to the PRIPL team

Data collection and field visit

- · Training of field team on tools
- · Initiation of field data collection process as follows:
 - Quantitative survey with beneficiaries.
 - In-depth Interviews (IDIs) with Implementation partners and other relevant stakeholders
 - Focused group discussion with beneficiaries, community/ opinion leaders, PRI members, etc.

Data analysis and report writing

- · Assimilate the key findings to analyse the data
- Present the draft of the impact assessment report to PRIPL team
- · Obtain and incorporate feedback received from PRIPL
- Prepare and submit final impact assessment report to PRIPL

Stage 1: Inception and desk review

An **inception meeting with** PRIPL team was organized to introduce the engagement team and provide an overview of the roles and responsibilities of the project team members. Discussions were also held during the meeting to align on the scope of work including the finalization of projects to be assessed during the first phase of the engagement and further, to finalize sample, timelines, and deliverables.

PW team **requested documents/ information relevant for conducting impact assessment** to develop a deeper understanding of the **projects under assessment**. In this regard, following documents were received from the PRIPL project team for the desk review:

- · MoU between PRIPL and respective Implementing Partners of the projects
- · Project annual reports projects
- Beneficiary data of projects
- Annual work plans and cumulative achievement

Post receiving the documents, the team initiated the desk review of the projects. Simultaneously, the team also initiated the desk review of the available secondary literature on the prevailing situation of natural resource availability, livelihoods, and social inclusion across the project geographies. This helped the team with the following:

- Develop understanding of the project details
- Mapping of stakeholders to be interacted with during the study
- Selection of study geography and finalization of sampling plan for primary research
- Strengthening our understanding on the socio-economic and demographic scenarios in the select geography
- Understand the relevance of the intervention with local problems, and national and state priorities
- Understand the coherence of the programme with other similar interventions especially government schematic assistances

Stage 2: Planning and tool preparation

Post mapping of key stakeholders in the previous phase, the study design comprising of a **mixed methodology (combining both quantitative & qualitative aspects) for projects was finalised.** Quantitative research was used to capture the value of the selected indicators whereas qualitative research helped in validating the quantitative findings and understand the rationale and reasoning behind them. The adopted sampling methodology for the impact assessment is described below:

Quantitative Research

Basis the data shared by PRIPL team; it was understood that 2,557 beneficiary households have been covered under SAMRIDHI project. Opting for the following formula, a sample of 247 was estimated for the study at 90% confidence interval and 5% margin of error.

The sample size for quantitative research was calculated using the following:

$$n' = n/1 + \{[z^2 * p (1-p)]/m^2*N\}$$

where the parameters are.

- n' sample
- Z is z score depending on Confidence Interval (in this case CI = 90% and z = 1.645)
- $n = z^2 * p(1-p)/m^2$
- N = population size (depending on individual projects as obtained from each project MoU)

- M = margin of error (5%)
- p = population proportion (considered as 50%,0.5)

It was understood from the beneficiary data shared by the PRIPL team that the project was implemented across 6 villages. However, for the study, the villages where majority of the interventions had been undertaken through the project across the 4 different themes were selected. Additionally, appropriate representation of thematic areas was ensured in order to focus on all the thematic areas.

Based on this understanding, the sample size for the project was distributed in the following manner:

Table 1: Coverage of Respondents

Villages	Water Conservation and management	Training on agricultural practices	Gram Sangathan and capacity building	Youth digital literacy and life skills
Bheeteda	26	23	7	7
Bichpuri	28	48	3	7
Karoda	36	47	6	8
Maharajawas	18	34	1	7

Based on the understanding gained from desk review of the project documents received from PRIPL team, the PW team devised a quantitative survey tool to conduct the field survey.

Qualitative Research

In addition to the respondents interacted during the quantitative study, the key stakeholders were mapped for the project based on the desk review. PW team conducted Focus Group Discussions (FGD), In-Depth Interviews (IDI), and Key Informant Interviews (KII) with the selected stakeholders to capture their perceptions related to the respective projects. The following stakeholders as shown in the below table were interacted as part of the qualitative research.

Table 2: Interaction with Respondents

Stakeholder	Type of interaction	Total
Beneficiaries water conservation and management activities and training on agricultural practices	FGD	4
Beneficiaries of youth digital literacy and life skill training	FGD	4
Beneficiaries of gram sangathan and capacity building activities	FGD	4
Project coordinator of SM Sehgal Foundation	IDI	1

Stage 3: Data collection and field visit

Before starting the quantitative and qualitative survey, a training of field team was conducted to make them familiar with the project activities and the tool. The field investigators/ enumerators were sensitized and trained beforehand for ensuring smooth interaction with the community. The field visits started with mobilizing the stakeholders at the field which was done in consultation and support of PRIPL and its implementing partners: to capture the present conditions of the stakeholder's and their perceptions towards the project activities. Data collection process was done through in-house research team. The team conducted survey, IDIs and FGDs in the sampled locations as per the finalised sampling frame and used tools to capture the data. The team collated the quantitative data and summarised the key findings from the qualitative part of the study.

Stage 4: Data analysis and report writing

The next step was to clean the quantitative data in order to initiate the analysis process. Post cleaning, data was reviewed and triangulated with the qualitative findings. The team then generated the data tables and started analysis of the key data points. Accordingly, draft impact assessment report was prepared and shared with PRIPL detailing the process adopted, the results, key findings, and suggestions. Basis the inputs received from PRIPL, the report was finalized and submitted for the Management's consideration.





3. Detailed findings and recommendations

This section of the report highlights the key findings of the impact assessment study of Project SAMRIDHI as per each of the activities and interventions. It provides a basis for IRECS analysis and recommendations for the project.

3.1. Profile of the respondents

Among the 247 respondents, 77% were male and 23% were female as depicted below from across the 4 villages. The average age of respondents was 44 years of age with the highest percentage i.e., 21% of the respondents belonging from the age brackets of 30-39 and 60-69. The highest number of respondents i.e., 89% belonged to the Other Backward Classes (OBC) category, while the lowest percentage (1%) belonged to the Scheduled Tribe (ST). Refer below a snapshot of the distribution of respondents based on gender, age, social category, and economic profile.



77%



23%

Figure 3: Age distribution (n=247)

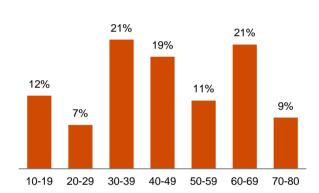
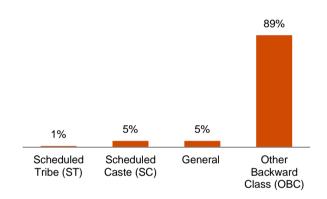
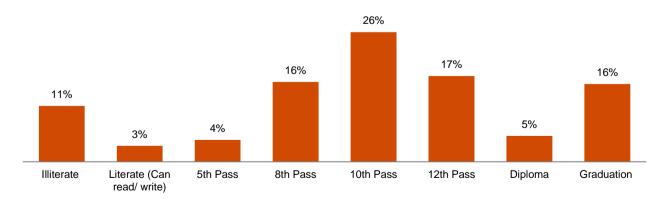


Figure 4: Social category distribution (n=247)



When asked about their education level, 11% of the respondents shared that they have received no formal education. Matriculation was the highest level of education attained by the majority of 26% (n=247) of the respondents.

Figure 5: Education levels among respondents (n=247)



Agriculture was reported as the **major livelihood activity** across the 4 villages with 92% (n=247) respondents reported of being indulged in agricultural activities as their primary source of income. 2% (n=247) of respondents reported agricultural labour as their primary income source. The remaining 6% (n=247) of the population were engaged in other occupations such as salaried private jobs, government jobs, and small businesses.

Figure 6: Primary source of income of the respondents (n=247)



100% the respondents (n=247) hold an Aadhaar Card whereas 89% (n=247) had an active bank account. This shows that there is awareness among the beneficiaries of financial and government linked initiatives. Possessing a bank account and digital identity gives them the potential to facilitate access to financial services and gives them a unique identification.

3.2. Water conservation and management

3.2.1. Need for the intervention

Behror being a water stressed area, locals face multiple challenges related to irrigation and agriculture. Limited irrigation facilities were the biggest challenge faced by the farmers which resulted in limited use of land for agriculture and less farm productivity. Considering limited water availability, the dependence on monsoon season became a challenge for farmers due to uncertainty of the monsoon rains. The water holding capacity is also less as the farmers generally have unlevelled land which reduces the efficiency of irrigation causing another challenge for the farmers. Based on the discussion with the local community members across the selected villages and project team from SM Sehgal Foundation, the key challenges faced by the local communities are discussed below:

Depleting ground water resources Due to low precipitation throughout the year, the recharging capacity of the below ground aquifers gets hampered. With most of the local communities dependent on agriculture for earning their livelihoods, the dependence on groundwater resources thus is quite high. As shared by the local farmers, the groundwater level has kept on decreasing for the last 20-25 years and in many places(in villages like Maharajawas and Bichpuri) currently, it is at a depth of more than 1000 feet making it impossible to access through borewells.

Lack of storage infrastructure

Lack of surface level water storage infrastructures limited rainwater harvesting in these areas. The local
communities reported that their villages had only 2-3 ponds to store rainwater before the project
intervention. Due to this, there was high dependence on ground water for irrigating their agriculture fields.

Increased manual work and expenses

• The majority of farmers in the project areas used to practice flood irrigation with a limited number of farmers using sprinklers (large). As shared by local farmers, irrigating one bigha of land through flood irrigation took around 12 hours. The large sprinklers on the other hand had limited range and the farmers had to keep disintegrating and integrating the sprinkler system to shift it to different parts of their field. Both these methods required a lot of time, manual efforts, and costs.

Decreasing land productivity Lack of water for irrigation for a sustained period, affects the productivity of the land with limited crop
yields. The productivity gets further affected in the years with anomalies in local precipitation. It was
reported by the majority of farmers in the project areas that they could only provide 4-5 irrigation cycles to
their Rabi crops when crops like wheat (which is their major staple food) required6-7 irrigations.

3.2.2. About the intervention

Identifying the crucial needs of the local communities, the SAMRIDHI project focused on replenishing the depleting water level and minimising water consumption during agriculture. Under this initiative there were multiple activities like creation of surface water storage capacity, creation of ground water recharge structure, creation of wastewater structure and promotion of water efficiency in agriculture.

Refer below a snapshot of different activities done under these initiatives.

Table 3: Water conservation and management activities

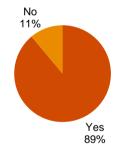
Water Conservation	Activities
Creation of surface water storage capacity	Construction of Pond
Creation of ground water recharge structure	Construction of Nala Bund, Construction of Recharge Well
Promotion of water efficiency in agriculture.	Water efficient irrigation practice through Drip and Sprinkler irrigation, Laser Levelling, Farm Bunding
Creation of wastewater structure	Construction of Soak Well

3.2.3. Impact of the intervention

Surface water storage and ground water recharge structures

The surface water storage and ground water recharge interventions focused on **creation of ponds**, **recharge wells** and **nala bunds**. All the four villages in consideration for the study had ponds built around the village clubbed with recharge wells for maximum results when receiving and storing the rainwater. The nala bund was constructed in Guwara village for collecting water and recharging the groundwater table.

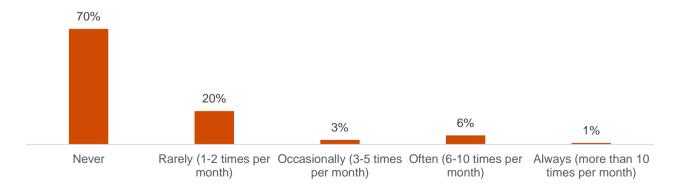
Figure 7: Intervention awareness (n=108)



Considering the proximity of ponds and recharge structures to the beneficiaries, the respondents were enquired regarding the awareness on new surface water storage and ground water recharge structures built around the villages.

89% (n=108) of the respondents were aware about the surface water storage and ground water recharge intervention and the structures built around their villages.

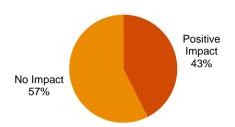
Figure 8: Surface water storage utilisation provided by constructed ponds (n=108)



The surface water storage capacity or the ponds constructed are filled up by rainfall water and come handy for the locals. Since, the ponds depend on the rainfall, the water dries up in other seasons. Cumulatively only 30%

of the respondents were able to utilise the stored water from these ponds due to the ponds drying up. This was reaffirmed during discussions with the respondents that the rainfall has been very low in the last 3 years due to which these ponds have dried up. Nonetheless, one of the major advantages of these storage structure is to gradually recharge the ground water table which will benefit the community in the long-term.

Figure 9: Impact of groundwater recharge structures (n=108)



43% (n=108) of the respondents believe that the groundwater recharge structures had a positive impact on the availability of water for their agricultural needs due to the increase in the groundwater level.

Also, during discussions some of the respondents were hopeful that these structures will be more fruitful in the future when they receive adequate rainfall in the next monsoon season.

Figure 10: Check Dam/Nala Bund built at Guwara village

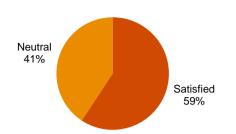


Figure 11: Piezometer installed at Guwara Village



The Check Dams/ Nala Bunds are created to harvest rainwater by forcing the flowing water to percolate underground and help in recharging the groundwater table. A Nala bund was constructed in Guwara village through the help of this intervention and Community contribution. The respondents shared how the nala bund has been impactful for their irrigation. One of the respondents stated, "Earlier the borewells used to work for only two months throughout the year properly, now water is available throughout the year in the borewells". They also mentioned that the soil's moisture has improved and is more fertile after the nala bund. Piezometers are also installed around the structures to monitor the change in groundwater level.

Figure 12: Satisfaction with the accessibility and availability (n=108)

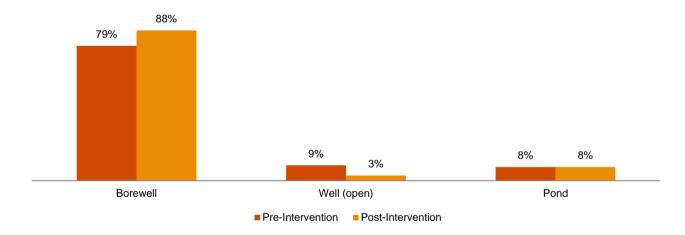


59% (n=108) of the respondents were satisfied with the accessibility and availability of water resources since the implementation of all these projects whereas 41% (n=108) respondents were neutral on this idea.

The respondents during the discussion had stressed that the low rainfall last year caused most of the structures to be inefficient and were hopeful for the next year for better output.

Water availability has always been a major issue in the region as stated above and reaffirmed by the community during discussions. The community has been largely using borewells, open-wells and ponds for their irrigation needs. Post intervention the usage of borewell as source of irrigation has increased by 9% while the reliance on open wells has reduced by 6%. Borewells have been the major sources of irrigation for the local communities in the project area. The % of respondents reporting that borewell is their major source of irrigation has increased from 79% during the pre-intervention period to 88% during the post-intervention period. The reasons cited by the respondents during the FGDs behind increasing dependence on borewells are the low rainfall levels during the previous 2-3 years which have led to almost all the surface water resources drying up and the farmers having to entirely depend upon ground water resources. Also, the decreasing ground water levels in many areas forced the farmers to deepen their water extraction resources (borewell/ open wells) but with cost of deepening open wells being more than borewells, more and more farmers have resorted to opting for borewells. Thus, justifying the reduction in % of respondents (9% to 3%) reporting open wells as their source of irrigation.

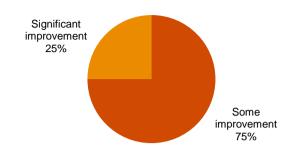
Figure 13: Sources of irrigation of water for irrigation (n=108)



Wastewater structures

Under wastewater structure intervention, soak wells were created to reduce the wastewater flow on the streets. Multiple soak wells across the villages under consideration were created to fulfil this objective. Only 18% (n=108) i.e., 20 respondents were aware of the soak wells and majority of these respondents were the ones who were living in proximity to soak wells.

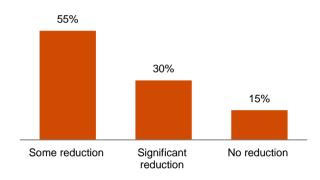
Figure 14: Impact of soak wells on village sanitation (n=20)



Out of the 20 respondents who were aware about the soak wells, 75% (n=20) i.e., 15 of the respondents believe that soak wells have reduced the wastewater on the streets and have led to significant improvement in village sanitation.

25% (n=20) of the respondents believe the soak wells have led to some improvement in village sanitation.

Figure 15: Impact of soak wells on reduction in waterborne diseases (n=20)



One of the associated outcomes with soak well intervention was clean and dry streets. Clean and dry streets and reduced wastewater has a direct impact on waterborne diseases. 55% (n=20) i.e., 11 respondents believe that soak well has reduced waterborne diseases in their village and in their locality.

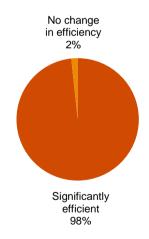
30% (n=20) i.e., 6 respondents believe that soak well has led to significant reduction in water borne diseases whereas 15% (n=20) believe that it caused no reduction in water borne diseases.

Promotion of water efficiency in agriculture.

As stated earlier, the limited availability of water in Behror impacts the farming for the locals, especially the irrigation process. The promotion of water efficiency in agriculture intervention was implemented to tackle the aforementioned issues. Under this intervention activities like water efficient irrigation practice through **Drip and Sprinkler irrigation**, **Laser Levelling**, **Farm Bunding** were implemented. Respondents were supported through provision of mini sprinklers for irrigation, some respondents got their lands levelled through laser levelling and for some farm bunds were constructed.

The project had **promoted the use of drip and mini sprinkler irrigation**. The farmers were provided subsidy for these mini drip sprinklers. 56% (n=108) respondents had received the support and had active mini sprinklers installed in their farms for irrigation.44% (n=108) didn't receive any support for installing mini sprinklers.

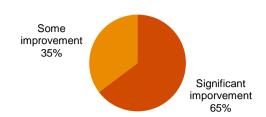
Figure 16: Impact of water use since drip and sprinkler (n=60)



The mini sprinklers have been very successful in **impacting the efficiency of water use during irrigation**. **98% (n=60)** of those who have received it believe that overall water use has become significantly efficient due to adoption of mini drip sprinklers for their farming.

The respondents during discussion shared that the water consumption has reduced and the spread of these mini sprinklers on field is better compared to traditional old sprinklers.

Figure 17: Improvement in terms of soil erosion (n=17)



Farm bunds were implemented for 17 respondents for improvement in groundwater levels. Farm bunds also reduce the soil erosion process and increase the groundwater levels by retaining the rainwater.

Out of the 17 respondents 65% saw significant improvement in terms of soil erosion in their fields while 35% felt there was some improvement in their fields.

Laser levelling intervention was done for the farmers to increase the sustained use of water efficient agriculture for better farm return. The farming lands were levelled to reduce any irregularities and slopes and to increase uniformity across the field. This has in return increased the efficiency of the water retaining capacity of lands resulting in an increase in overall efficiency of irrigation practice. 55% (n=108) of the respondents have received the laser levelling support for their farms.

Figure 18: Impact of laser levelling on the efficiency of their land preparation and irrigation practices (n=59)

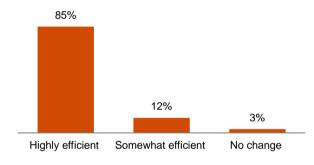
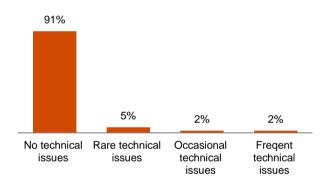


Figure 19: % of respondents who had to face any technical issues while operating and maintaining laser levelling equipment (n=59)



85% (n=59) of the respondents believe that their land preparation and irrigation practice is highly efficient now due to the impact of the laser levelling intervention on their field. 12% (n=59) of the respondents believe that there is some improvement in their efficiency related to land preparation and irrigation techniques. For some respondents there was an increase in cultivable land due to levelling and further were able to increase their produce from the increased land. Overall, the respondents collectively agreed that the water retaining capacity of the lands have increased after laser levelling.

The respondents stated during discussion that the implementation of laser levelling was done with minimal technicalities to make the process simple and convenient for the beneficiaries. Owing to this 91% (n=59) of the respondents didn't face any technical issues and the process was effectively completed.

Overall impact on irrigation

The overall impact on irrigation of these interventions can be seen through the change in the three variables mentioned in the table. The change in average number of irrigations according to the respondents is due to the increased spread of the water through mini sprinklers resulting in more coverage of the field and efficient irrigations hence resulting in reduction of number of irrigations.

The respondents were also very satisfied with the reduction in time required by one person to irrigate one acre of land and mentioned that the sprinklers placed once doesn't need to be changed until harvesting making the process very less time consuming for the farmers resulting in the 60% decrease.

The average cost of irrigating one acre of land has also decreased according to the beneficiaries, albeit only by around 3% due to switching to mini sprinklers from the old traditional big sprinklers as the consumption of electricity is less in the mini sprinklers and they require less time to cover larger area. The reason behind the low decrease in cost associated with irrigation is due to the fact that although time required for irrigating one

acre has reduced significantly, this has allowed the farmers to provide more number of irrigations to their crops. Thus, the overall cost of irrigation has remained the same.

Table 4: Change in irrigation related parameters

Variable	Pre-Intervention	Post-Intervention	Average change
Average number of irrigations possible to be done within a year	5	7	2 (40% Increase)
Average cost of irrigating one acre of land (INR)	12,510	12,104	INR 406 (3.24% Decrease)
Average time required by one person for irrigating one acre of land (In hours)	16	6.4	9.6 hours (60% Decrease)

Considering all the water conservation activities, the overall impact for water efficient irrigation on multiple fronts was observed. The following figure compiles all the changes observed. The biggest impact for 71% beneficiary i.e., less efforts required for irrigation is majorly attributable to mini drip sprinklers as mentioned by the respondents during discussion and as discussed earlier. The reduced cost of irrigation and increase in cropping intensity according to respondents can be attributed to uniformity in land brought by laser levelling, efficient coverage of crops with water supplies due to sprinklers and farm bunding helping in reducing soil erosion. The increased land under cultivation was ascribed to laser levelling for some beneficiaries. With changes in their field some of the respondents also mentioned how they had already started cultivating different crops like carrot, onion etc. other than their regular crops. Also, improved access to water for irrigation has helped the respondents to dedicate more land to wheat cultivation (which happens to be their staple food) instead of mustard and gram as wheat requires 2-3 more irrigations in comparison to mustard and gram.

Figure 20: % of respondents benefited from the intervention (n=108) 4

71%	Less effort required for irrigation.
43%	Reduced cost of irrigation.
30%	Increased cropping intensity.
25%	Increased land area under cultivation.
22%	Stopped soil erosion and improved soil health.
19%	Increased number of crops cultivated.

3.3. Agricultural Practices

3.3.1. Need for the intervention

As discussed earlier that 92% (n=247) respondents in the intervention villages primarily indulged in agricultural activities and is their primary source of income. During discussions with the farmers and the SM Sehgal Foundation team, it was reported that the farmers depend on local input shops for information on seed

⁴ This was a multiple coded question due to which value will not add up to 100.

varieties, fertilizers, and plant protection strategies. The information they receive is mostly unreliable and inefficient. As a result, resource-constrained farmers are unable to make the best use of their money or achieve the anticipated returns from their investment. Farmers must also shoulder the cost of crop and soil damage caused by an uneven use of nutrients and pesticides due to lack of reliable knowledge. Refer below the figure which highlights the challenges faced by the farmers.

Limited access to quality Agri inputs

 Due to absence of availability of authentic and quality Agri inputs the farmers struggle with reduced crop yield and compromised produce quality. Famers shared during discussion how they have kept trying various shops for good inputs which is very inefficient for most of the farmers with low income and small landholding.

Lack of know-how on good agricultural practices (GAP) The farmers mentioned how there was lack of knowledge on good agricultural practices throughout the villages. The knowledge gap results in improper crop management, seeds selection, fertiliser selection and decrease in soil health reducing their yields and productivity.

Declining productivity As a result of the above two challenges, declining productivity is a critical concern for farmers in the region. The farmers mentioned that lower yields and reduced agricultural output led to financial hardships and forced farmers to take high-interest loans for farming which results in exhaustion of resources for the farmers making things difficult for them and their families.

Decreasing land productivity

Rise in cost of cultivation is significant obstacle for the community and was mentioned during the
discussion that with every year the expenses see a rise, making agriculture less economically
viable. They also mentioned about minimal profit margins leading to debt and financial stress.

3.3.2. About the intervention

The agricultural practices in Behror are active mostly in both the Kharif and Rabi seasons. **Out of the 247 respondents 152 have benefited from the agricultural interventions**. 98% (n=152) of the respondents reported farming during both the seasons while 2% (n=152) were farming only during the Kharif season. Millet, Cotton for Kharif season and Mustard Wheat for Rabi season are the widely grown crops in the region. These crops have been traditionally grown in the region while cotton is taking the larger share recently, seeing a 2% rise as shown below in the graph, due to better monetary returns as mentioned by beneficiaries. They also mentioned how these crops have been picked traditionally considering the water requirements, market demand and returns of these crops. Other than some farmers growing new crops like carrots, onions etc., most of the farmers have stuck to these traditional crops resulting in no major change in crop selection. The respondents credited this absence of change in crop selection to not having the luxury of risking their farm output from new crops when there is uncertainty of rainfall.

Under the agricultural practice intervention activities like Package of Practices (PoP) demonstrations, providing Package of Practices (PoP) input, soil testing, field days, workshops and composting demonstration was done for the farmers to improve soil nutrition and best farming practices.

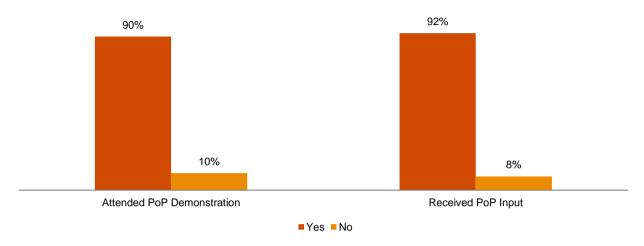
3.3.3. Impact of the intervention

PoP Demonstration, PoP Inputs, Field Days and Workshops

The PoP demonstrations, workshops and field days were done for the farmers to impart efficient agricultural practices. The demonstration of PoP was done in half an acre of the farmer's field, while on the other half acre the farmer continued to follow his own traditional practice with the same seed. The difference in yield during the harvest was utilised to show the effectiveness of the improved practices, thereby also motivating other farmers of the village to adopt the practices as this intervention improved crop productivity which increased farm income. The field days and workshops were also organized on the same line for the farmers to get the first-hand information and practical evidence of efficient farming practices. The respondents have also been provided with PoP inputs consisting of essential micro- and macronutrients, correct quality and quantities of chemicals, high-yielding varieties, or hybrid seeds.

90% (n=152) of the respondents have attended the PoP demonstration, workshops, and field days whereas 92% (n=152) of the respondents received the PoP inputs as shown below in the graph. Out of the 10% respondents who didn't attend the demonstration, 2% respondents were still able to receive the input and mentioned learning valuable insights from other neighbouring farmers who attended the demonstration.

Figure 21: % of respondents who have attended and received PoP inputs (n=152)



The data reflects that 89% (n=140) of the respondents felt that basic training was provided to them whereas 11% (n=140) of the respondents felt that expert training with ongoing support was provided for implementing the learnings from the demonstrations, workshops, and field days. Regarding the implementation of learnings 70% (n=140) of the respondents had implemented the learnings to some extent with gradual implementation whereas 30% (n=140) of the respondents had extensively and immediately applied the learnings from these demonstrations on their fields.

Figure 22: Training and support for implementing the learnings from Demonstration, Field Days and Workshops (n= 140)

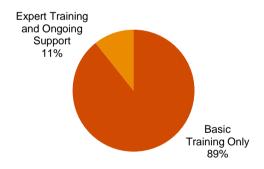
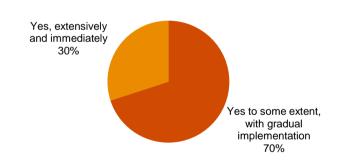


Figure 23: Application of knowledge gained from Demonstrations, Field Days and Workshops (n=140)



The respondents shared that these demonstrations helped them implement the high yield seeds and fertilizer combinations on their fields and which had better output compared to their pre intervention methods. This impact can be seen through the data in the table below.

Both the major kharif and rabi crops widely grown in the community have seen an increase of yield post intervention as shared by the beneficiaries. The average yield of millet and cotton per acre saw 24% and 27% rise whereas the average yield of mustard and wheat per acre saw 24% and 15% rise respectively.

Table 5: Average Kharif and Rabi Yield in 1 Acre (In quintals)

Kharif Crops Pre-Intervention		Post-Intervention	Change Observed
Millet	9.7	12	24% increase
Cotton	5.9	7.5	27% increase

Kharif Crops Pre-Intervention		Post-Intervention	Change Observed	
Rabi Crops	Pre-Intervention	Post-Intervention	Change Observed	
Mustard	7.8	9.7	24% increase	
Wheat	15	17.2	15% increase	

On the other hand, the cost of cultivation of 1 acre also decreased for the farmers across all the major crops with support. The respondents shared that the input support provided under the project helped them save money for mustard and pearl millet. Also, the adoption of mini sprinklers has contributed towards decrease in the cost of irrigation as reflected in Table 4. There are two different scenarios post-intervention which is based on whether the respondent have received irrigation and input support from project. In the situation where a farmer has done cropping without sprinkler and input support from the project, the cost of cultivation is significantly higher as the rising prices of agri-inputs and electricity has increased the costs by many folds. Comparison between with support post-intervention scenario and without support post-intervention scenario with the pre-intervention scenario gives the idea how much the project contributed to saving money among the farmers.

Table 6: Average Cost of Cultivation of Kharif and Rabi crops in 1 Acre in INR

		Cost (INR) Pre- Intervention	Cost (INR) Post- intervention		Change due
Crops	Season		Without support	With support	Change due to support
Pearl Millet	Kharif	7,862	8,603	7,200	-8%
Cotton		8,642	10,122	8,000	-7%
Mustard	Rabi	8,483	9,618	7,680	-9%
Wheat		12,283	13,358	12,000	-2%

^{*} With support – Distribution of seed and agri-inputs by the project

Table 7: Average annual income from agriculture

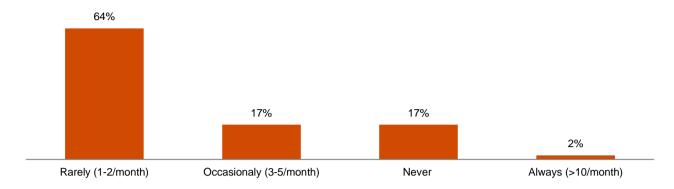
Variable	Pre-Intervention	Post-Intervention	Change
Average annual income from agriculture	68,733	87,240	+27%

Overall, the average annual income from agriculture derived from the data shows that there has been a 27% increase for the farmers. There are many reasons behind this increase such as the increase in market prices for commodities, cost saving by farmers in electricity, and purchasing of agri-inputs, and more importantly increase in the crop yields.

Composting Demonstration

Composting demonstration was also part of promoting sustainable agricultural practices. 34% (n=152) of the respondents reported of attending composting demonstrations. Respondents stated that they have actively started using the organic fertiliser produced from composting. This impact can be seen in the graph below as 64% of the respondents engage in composting activities at least once or twice per month whereas 17% (n=52) of the respondents engage more than three times per month. However, some of the respondents found the practice arduous and hence didn't engage much post the demonstration.

Figure 24: % of respondents who engage in composting (n=52)



The overall impact of the agricultural initiatives was profound for the respondents as they shared that from getting awareness of high yield variety seeds, implementing better fertilisers, chemicals in right amounts composting the waste the respondents were well satisfied with the useful and valuable learnings derived from these demonstrations. The respondents who found it moderately useful mentioned about the limited distribution and quantity size of PoP's, although these respondents were hopeful of receiving sufficient packages in future.

3.4. Gram Sangathan and Capacity Building

3.4.1. About the intervention

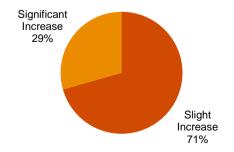
The Gram Sangathan or Village Development Committee was set up in each village during the intervention. The Sangathan consists of social leaders, panchayat members, progressive farmers and representatives chosen from all sections of the community. The Sangathan members' major role was to engage in decision making, planning, and implementing the projects, which included assisting in the identification of strategic locations for construction work, beneficiary selection and collection of community contribution. The Sangathan's other major responsibility was to safeguard the structures created during the project i.e., maintain and repair them to ensure their sustainability, using the corpus funds contributed by the community.

17 out of the 247 respondents were part of the Gram Sangathan (VDC) across the villages and had received capacity building training. According to respondents, Gram Sangathan members were trained in on their role and responsibilities, water structure management, decision making, and in local infrastructure management. The women members were additionally trained on health, hygiene, and nutrition.

3.4.2. Impact of the intervention

The capacity building training was done on various fronts to have optimum functioning of the Sangathan. As mentioned above the major role of Gram Sangathan was decision making and planning for the community. This was one of the major focus areas during training which the respondents also reaffirmed during the study.

Figure 25: % of respondents who observed an improvement in decision-making and planning (n=17)



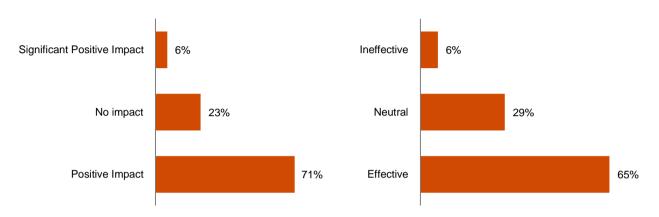
Improvement in decision making and planning process within Gram Sangathan due to capacity building sessions was mentioned by respondents during discussions. 71% (n=17) of the respondents believe that they have observed significant improvement in decision making and planning while 29% (n=17) believe that there has been slight improvement.

The Gram Sangathan was responsible for supporting in selection of project beneficiaries and project sites for construction of water infrastructures. The figures below reflect the that 71% (n=17) respondents believed that training had positively impacted this process whereas 23% (n=17) believed that training had no impact. It was also reported by few of the Gram Sangathan members that there was preference given to certain individuals by the Sangathan while choosing the project beneficiaries.

The Sangathan members were also trained on safeguarding and maintaining the structures built under the project. According to respondents, the output of this training was effective as they were satisfied with the maintenance of the structures like school renovation, check dams, farm ponds, etc. by the Sangathan members. 65% (n=17) of the respondents believe that the Sangathan was effective in safeguarding and maintaining the structures.

Figure 26: Impact of training on selection of respondents and project sites (n=17)

Figure 27: Output in safeguarding and maintaining the Project structures (n=17)



As part of capacity building, the women members of Gram Sangathan were trained on health, hygiene and nutrition. The members available during the qualitative discussions mentioned that these training sessions have helped them to gather valuable insights related to health, hygiene, and nutrition which were implemented in their daily life. Figure 28 shows that 82% (n=17) of the respondents reported that the women members of Gram Sangathan were trained on these topics. The impact of these training sessions saw some improvement in their health and wellbeing (as shown in figure 29) which was agreed by 76% (n=17) respondents while 12% (n=17) of them shared that improvements were significant. On the other hand, 12% (n=17) saw no improvement due to these changes.

Figure 28: Women members of Gram Sangathan being trained on health, hygiene, and nutrition (n=17)

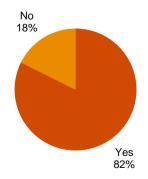
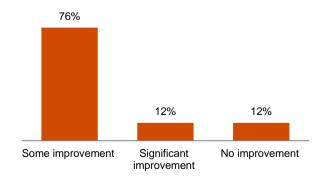


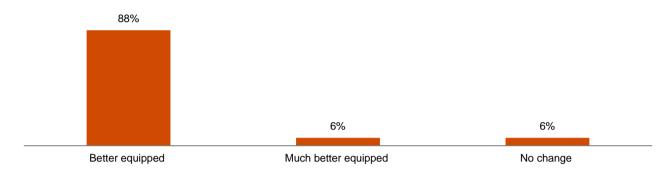
Figure 29: Impact of health and nutrition training for women members of Gram Sangathan (n=17)



The Sangathan members were trained in accessing and utilizing government resources for village development. The respondents shared how the Gram Sangathan has partnered with village panchayats to seek maximum benefit for the village development activities. They have partnered with MGNREGA to leverage schematic assistances to obtain manual labour while building the structures. This impact can be seen in the figure 30 as 88% (n=17) of the respondents believe that the Gram Sangathan members are now better

equipped to manage the water infrastructures, while 6% (n=17) believe they are much better equipped to access and utilize government resources and support for development of the village.

Figure 30: Ability to access and utilize government resources and support for village development (n=17)



While talking about the roles and respondents of the Gram Sangathan, the respondents mentioned that there has been improvement in transparency and accountability related to establishment, maintenance and management of infrastructures formed for the benefit of the community. As shown in figure 31, 82% (n=17) of the respondents believe that the members have brought positive impact on accountability and transparency.

Due to the improved transparency and accountability, there has also been an increase in community engagement and cooperation in the villages. 71% (n= 17) of the respondents have witnessed an increase in the community cohesion due to activities of Gram Sangathan visible in figure 32.

Figure 31: Gram Sangathan member on better transparency and accountability (n=17)

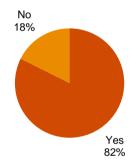
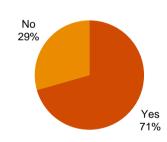


Figure 32: Impact of Gram Sangathan activities on community engagement and cooperation (n=17)



The Gram Sangathan in Karoda village was also involved in the renovation of the government secondary school and construction of a community centre. 57% (n=7) of the respondents who are the members of Gram Sangathan from Karoda village believe that the work done under the project has led to a positive impact on school infrastructure and learning environment. The respondents were very satisfied with the school renovation and mentioned during discussions how the kids were happy as the facilities have improved. New colourful paint across the school, drinking water, sanitation was revamped for the kids. This impact is visible in the figure 34 wherein 57% (n=7) of the respondents believe that there is significant improvement in the quality of facilities and change in attendance of students.

Figure 33: Impact of renovation on the village school infrastructure and learning environment (n=7)

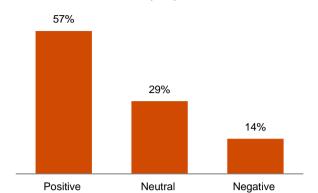
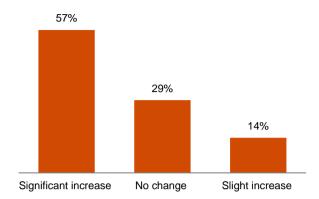


Figure 34: Impact on the quality of facilities and change in attendance of students (n=7)



Along with school renovation, a community centre was also built in Karoda village during the intervention with the purpose of having a dedicated space for the community to discuss and resolve key development issues. The respondents shared that this community centre has created a space for active discussions and resolutions for the villagers on all kinds of topics related to community. The impact is visible in the below graph (figure 34) where 71% (n=7) respondents reported that they have utilise the centre monthly whereas 29% (n=7) reported that they utilize it weekly. Figure 36 shows that 86% (n=7) respondents believe that there has been significant improvement in issue resolution while 14% (n=7) believe there has been moderate improvement.

Figure 35: Utilisation of the community centre (n=7)

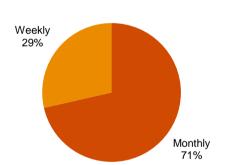
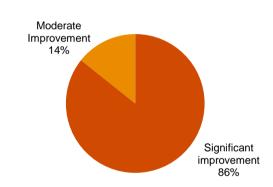


Figure 36: Impact on issue resolution since the construction of the community centre (n=7)



Overall, it was reported by respondents that the Gram Sangathan has been efficient on all fronts but when asked about improvement areas for future, the respondents shared about the exhaustion of community funds which has resulted in reduction of interest of the Sangathan members. The members and community's involvement has also reduced now.

3.5. Youth Digital Literacy and Life Skills

3.5.1. About the intervention

This intervention focused on empowering the youth through Digital Literacy and Life Skills Education. The idea of this intervention was to equip the youth with digital skills and life skills through which personality and skilful development of the youth can be achieved. The intervention had activities focusing on **improvement of computer skills**, **increasing self-confidence**, **improving awareness related to career and goals** etc. 30 out of 247 respondents were the respondents of this digital literacy and life skills initiative and had attended the 6-month long sessions.

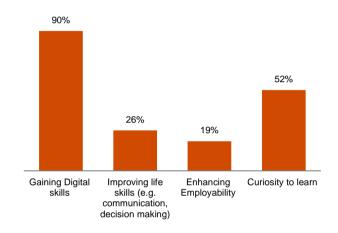
3.5.2. Impact of the intervention

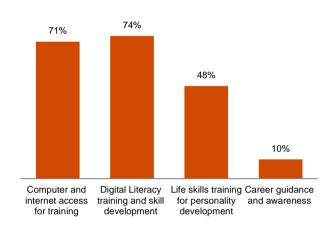
During the discussion, the respondents attributed the reason for joining the training session to acquire digital skills which is essential in today's world for personal as well as career development. This clubbed with curiosity to learn were the major reasons or motivation factors for these youth to join these interventions. This is visible in the graph below (figure 37) where 90% (n=30) of the respondents were motivated to gain digital skills whereas 52% (n=30) were curious to learn.

The youth were actively supported through the provision of internet and computers for providing training on digital literacy and skill development. 71%(n=30) and 74%(n=30) of the respondents reported that they have received these provisions. 48% (n=30) of the youth said that they were also trained in life skills for personality development. This impact can be seen in the graph below (figure 38).

Figure 37: Motivation factors/support expectations for joining the digital literacy and life skills program (n=30)

Figure 38: Support received from the digital literacy and life skills program (n=30)





These training sessions has led to change in the computer and internet skills, life skills and personality trait among the beneficiaries. The respondents shared that they now feel more confident using computers and feel equal to the other students in school who are skilled around computers. 60% (n=30) reported that there has been significant increase in their computer and internet skills whereas 40% (n=30) saw a slight increase in these skills. On the other hand, 77% (n=30) of the respondents believe that they saw some development in their life skills and personality traits. 20% (n=30) believe they saw significant development for the same.

Figure 39: Impact on computer and internet skills following the training (n=30)

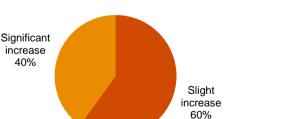
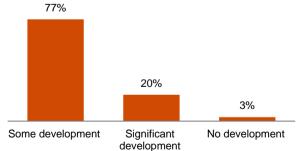


Figure 40: Impact on life skills and personality traits among the youth (n=30)



With increased skills, the respondents shared **that there was an increase in their confidence** in utilising the digital tools and resources. 90% (n=30) of the respondents had **gained moderate confidence** whereas 10% (n=30) of the respondents had gained significant confidence around these tools. With this increase in confidence the increase in employability prospects was also the belief for 50% (n =30) of the beneficiaries.

Other than employment, these interventions have also increased the inclination towards pursuing further education in digital skills and technology domain or utilising these skills for their convenience while pursuing any other field of education. This can be confirmed through the figure 41 which shows that 70% (n=30) of the

youth beneficiary has interest towards pursuing education or vocational training in the field of digital skills and technology. The preparedness for accessing the online education resources and opportunities is also acquired through the training. As shown in figure 41, 77% (n=30) of the respondents feel they are somewhat better prepared whereas 17% (n=30) were much better prepared to access these resources.

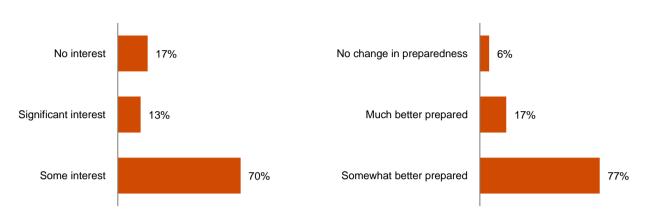
Figure 41: Interest growth in pursuing further education or vocational training related to digital skills and technology (n=30)

Figure 42: Preparedness to access online educational resources and opportunities (n=30)

Impact on bridging the digital divide

Narrowed

the divide



Alongside these developments, one of the additional outcomes from this intervention was the readiness among local youth to utilize the life skill training program for community initiatives. The respondents shared how they have been sharing these learnings from these sessions to students who have not joined these activities but now are interested. Figure 43 shows that 57% (n=30) of the respondents said they felt encouraged to contribute their part in community initiatives through the learning from the life skills session.

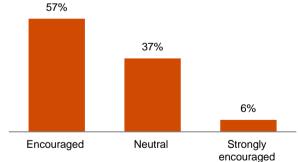
Overall, the intervention has also helped to reduce the digital divide among the local youth. The respondents while discussion shared that now they were able to utilise their school computers and felt like an equal in the classroom. The impact on the digital divide can be seen in the figure 44 where 87% (n=30) of the respondents believe that the intervention has contributed to narrowing the digital divide for the youth in the school.

Figure 43: Impact of life skills training program on encouragement to actively participate in community initiatives (n=30)

No change in the divide...

Figure 44:

(n=30)



Overall, the respondents were happy with the intervention but when asked about any improvement areas, the students mentioned their inclination towards taking up coaching and tuition for competitive. They shared that it would be hugely beneficial if such trainings can be organized in the village. This was observed across all the villages during discussions and the respondents were hopeful of the same in future.

3.6. Stories of change

Change story: 1 - Sowing Success: A step towards a better life with mini sprinklers

Mr. Amar Yadav (changed name) is a 44-year-old male who resides in Karoda village in Behror tehsil of Alwar district along with 5 other family members and has completed his education till 10th standard.

Amar, a resilient farmer, was once grappled with the relentless challenges of water scarcity and unpredictable yields. Prior to the intervention, Amar relied on traditional irrigation methods, facing the harsh reality of financial instability due to scarcity of water and inconsistent crop yields. The intervention, a strategic move aimed at promoting water efficiency in agriculture, targeted farmers like Amar by providing subsidies on mini sprinklers. Embracing this technological shift, Amar underwent training facilitated by the Sehgal Foundation, transitioning from conventional irrigation to a more precise and efficient system. The impact was profound and multifaceted. Amar's farm experienced a notable surge in water efficiency, resulting in healthier crops and improved yields. He mentions "Earlier I had two old big sprinklers on my field, there reach on the field was minimal and required more efforts in shifting them from one end to another end but now I have 4 mini sprinklers and they are very efficient in reaching all the parts of my plot. I have benefitted a lot from these sprinklers as I save a lot of water and my time and efforts on field". The financial burden on Amar has also eased to some extent due to these mini sprinklers and he plans to install one more sprinkler on his land.

Change story: 2 - Seeds of Sustainability: A tale of transformation with PoP

In the agrarian landscape of Maharajawas in Behror tehsil of Alwar district, farmers faced a litany of challenges exacerbated by non-remunerative farming practices. Mr. Suresh Yadav (changed name) is a 40-year-old male who resides in Maharajawas village along with 4 other family members and has completed his education till 8th standard.

Before the intervention, farmers like Suresh Yadav struggled with declining yields and the escalating cost of inputs. The intervention brought a ray of hope by introducing high-yield seeds tailored for the local environment, coupled with a supply of quality chemicals to ensure crop health and productivity. With the trainings of Package of Practices (PoP), he gained access to a systematic approach, incorporating modern agricultural techniques. The intervention not only alleviated the financial burden on Suresh but also resulted in a substantial increase in crop yields. The synergistic combination of high-yield seeds and quality chemicals enhanced the overall agricultural output, contributing to Suresh's economic stability. As Suresh reflects on this transformative journey, he expresses gratitude, saying, "The new seeds and chemicals did make a difference. My crops were healthier, and I was not anxious about unpredictable yields. It was not an overnight solution, but I think it's a step in the right direction for a more stable farming life. People in the village are noticing the changes, and that's encouraging."

3.7. IRECS analysis

Based on the interactions with the key stakeholders and desk review of the documents, the impact of the program was evaluated on 'IRECS framework'. The IRECS analysis summary has been presented in below Table:

Parameter	Assessment from the study	
Inclusiveness	The program has included both the genders as the beneficiaries to avail the various supports and reduce gender-based inequalities.	
	 The program also included the most vulnerable sections of the society with illiterate individuals forming a significant part of the program beneficiaries. 11% of the respondents reported that they have received no formal education while 23% of the respondents were under matriculate. Associating with the program has allowed these people to gain much needed exposure and knowledge related to various aspects of livelihood activities. 	

Parameter	Assessment from the study		
	The target respondents of the project were the small and marginal farmers having on an average 1.8-2.4 acres of cultivable land. The dwindling ground water resources and fluctuations in precipitation levels have increased the vulnerability of the small and marginal farmers. The project identified their vulnerabilities and provided them with a range of support to improve their livelihoods status.		
Relevance	 Limited irrigation facilities are the biggest challenge faced by the farmers which results in less cultivable land and further leading to less productivity for the farmers. Also, the lack of surface level water storage infrastructures meant the farmers were fully dependent on ground water resources for irrigation which put added pressure on the ground level aquifers. The program's focus on the establishment of water conservation/ management structures has been instrumental in improving water retention and irrigation access among local farmers. 		
	 Also, the majority of farmers in the project areas used to practice flood irrigation with a limited number of farmers using sprinklers (large). As shared by local farmers, irrigating one acre of land through flood irrigation took around 19.2 hours. The large sprinklers on the hand had limited range and the farmers had to keep disintegrating and integrating the sprinkler system to shift it to different parts of their field. Both these methods required a lot of time, manual efforts, and costs. The promotion of mini sprinklers was important to promote water use efficiency among the local farmers. 		

Parameter Assessment from the study **Effectiveness** Establishment of water conservation/ management structures and promotion of mini sprinklers has helped in reducing water usage during irrigation has allowed the respondents to increase their number of irrigations from 5 to 7 in a year. Increased access to water for irrigation has helped the respondents to dedicate more land to wheat cultivation (which happens to be their staple food) instead of mustard and gram as wheat requires 2-3 more irrigations in comparison to mustard and gram. Adoption of mini sprinklers has also helped the respondents reduce the time and effort required for irrigating their land. The average time required for irrigating 1 acre of land has reduced from 16 hours (in case of flood irrigation) to around 6 hours for mini sprinklers. Also, 65% (n=108) of the respondents saw significant improvement in terms of soil erosion in their fields while 35% (n=108) felt there was some improvement in their fields due to levelling of land done under the project. 63% of the respondents have reported that the PoP demonstration and input support have been very useful as it has led to increased crop yields. It was reported that the average yield per acre for both pearl millet and mustard has increased by 24% Also, this has allowed the respondents to reduce their cost of cultivation as they have to purchase lesser amount of external inputs. Being part of the Gram Sangathans and attending the training sessions have allowed the respondents to improve their decision-making skills significantly as reported by 71% of the respondents. The project also provided trainings on health and hygiene to the women members of the Gram Sangathans. 76% of respondents have reported that these trainings have helped in improving their knowledge and understanding around health and hygiene. The Gram Sangathan members in Karoda village were also involved in the renovation of the government secondary school Karoda and construction of community centre. New colourful paint across the school, drinking water, sanitation was revamped for the kids. The respondents were very satisfied with the school renovation and mentioned during discussions how the kids were happy as the facilities have improved. This impact is visible as 59% (n=7) of the respondents believe that there is significant improvement in the quality of facilities and change in attendance of students. They also believe that the project had a positive impact on school infrastructure and learning environment. The trainings on digital literacy and life skills saw a change in the computer and internet skills, life skills and personality trait among the respondents. The respondents shared that now they feel more confident using computers. 60% (n=30) saw a significant increase in their computer and internet skills whereas 40% (n=30) saw a slight increase in these skills. On the other hand, 77% (n=30) of the respondents believe that they saw some development in their life skills and personality traits while 20% (n=30) believe they saw significant development for the same. Convergence The project took a collaborative approach by involving the Panchayati Raj Institutions (PRI) to establish the water storage infrastructures. The PRI ensured that the labour involved in building the infrastructures are paid through convergence with MGNREGA. This has allowed to create an added ownership among the PRI for the water structures. Sustainability The water management infrastructures created under the program are managed by the Gram Sangathans (formed in every village) who are responsible for repairing the infrastructures. These Gram Sangathans have their own corpus funds, which is a contribution from PRIPL and the local communities, and which is kept for meeting the repairing costs in future. The local farmers have been trained on adopting sustainable agricultural practices by focusing on preparing their own agri-inputs instead of depending on the external input shops. The adoption of such practices by the local farmers would not only help in reducing water and carbon footprint in agriculture but also, reduce their vulnerabilities

Parameter	Assessment from the study	
	which arises due to dependence on external stakeholders such as input shops. Hence, its sustainable.	

3.8. Limitation

- The study encountered some challenges due to the timing of data collection, coinciding with the active harvesting season. This temporal constraint reduced the availability of farmers for in-depth interviews.
- A notable limitation was the varying levels of technical understanding among some farmers, particularly
 concerning aspects related to some technical questions like cost of cultivation etc. This diversity in
 comprehension presented difficulties in gathering detailed and precise information from certain participants.

3.9. Recommendation

Capacity building of farmers on adopting natural farming/ regenerative agriculture techniques

• It was also understood from the interactions with the farmers that they lack the technical know-how to effectively use the locally available resources in agriculture. Farmer field schools, pilot plots, and seed trials can be organised to give practical training to farmers on preparation of bio-inputs and opting for resource saving practices like mulching and line sowing. Creating a community-cadre base who can provide regular technical and handholding support to the farmers can also help create an effective extension model. Also, it was seen that there is very less prevalence of diverse farming systems in the Behror area. Identifying synergistic production systems (agroforestry and intercropping/ mixed cropping/ crop rotation models) and training the farmers on how to adopt such systems can further help in improving their soil health and farm productivity.

Ensure access to quality and affordable agri-inputs

• Availability of quality seeds for various crops is a major issue as highlighted by the local communities. Respondents shared that the seeds and agri-inputs available at the local input shops lack the desired quality and thus, affects their crop yields. Additionally, during the season (post-sowing), due to high demand, the local shops demand exorbitant prices for the inputs making it challenging for the local farmers to procure agri-inputs. Promoting individual/ collective entrepreneurship to leverage the void between demand and supply for quality seeds can help in creating sustainable social enterprises. Identifying local youth and training and handholding them on agri-entrepreneurship to establish micro or small secondary enterprises around seed breeding and trading and nurseries can help the local farmers in getting quality agri-inputs at local level.

Introduce drought resistant crops varieties among local farmers

Being an arid region, opting for drought resistant crop varieties for crops like wheat can reduce the
requirement of water for irrigation. The project team can consult with the local KVK (Krishi Vigyan Kendra)
to conduct seed trials to identify the most suitable crop varieties for the region. This would not only allow the
farmers to grow their crops with lesser use of water but also, reduce their vulnerabilities arising from crop
failure due to prolonged dry spells.

Provide value addition and marketing support through promotion of collective marketing model

Currently, majority of the marginal farmers are dependent on local traders for selling of their agri-produce
as they lack the quantum to carry their produce to the mandis. Establishment of a collective marketing
model through a Farmer Producer Company focused on primary value addition would allow the farmers to
get remunerative prices for their products. Processing infrastructure for millet and oil processing units for
mustard can help the local communities produce value added products and sell their produce directly to
institutional buyers or wholesalers.

Promote off-farm and non-farm-based livelihood activities to diversify the income sources available to farmers

 Farming is becoming very challenging in areas like Maharajawas due to the undulating nature of the land in such villages. In such cases, the local communities can be supported through capacity building, input, and marketing support to take up alternative livelihood activities in the form of livestock rearing or non-farm activities like making handicrafts and handlooms. The project may provide the financial support for the farmers to purchase livestock along with seeds of drought resistant fodder crops to reduce the local communities' excessive dependence on farming.

Tailor youth interventions based on the local needs of the students

As stated earlier the youth had more aspirations related to the program. Customising the youth training
programs to better align with their aspirations would be an efficient method. Providing coaching for
competitive exams and offering a curriculum that addresses their specific educational needs will
enhance the relevance and impact of youth intervention.



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