



Impact Assessment of Srijal project

Pernod Ricard India Private Limited


June 2024

Price Waterhouse Chartered Accountants LLP



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10. Our work was limited to the samples/specific procedures described in this report and were based only on the information and analysis of the data obtained through interviews of beneficiaries supported under the program, selected as sample respondents. Accordingly, changes in circumstances/samples/ procedures or information available could affect the findings outlined in this report.

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List of Acronyms

| Acronyms | Full Form |
|----------|---|
| CIF | Community Investment Fund |
| CSR | Corporate Social Responsibility |
| DSR | Direct Seeding of Rice |
| FGD | Focus Group Discussion |
| GAP | Good Agricultural Practices |
| IDI | In-Depth Interview |
| INR | Indian Rupee |
| IRECS | Inclusiveness, Relevance, Effectiveness, Convergence and Sustainability |
| KII | Key Informant Interview |
| KPI | Key Performance Indicator |
| LoE | Letter of Engagement |
| MFI | Micro Finance Institutions |
| MGNREGA | Mahatma Gandhi National Rural Employment Guarantee Act |
| MoU | Memorandum of Understanding |
| OBC | Other Backward Classes |
| PRI | Panchayati Raj Institution |
| PRIF | Pernod Ricard India Foundation |
| PR IPL | Pernod Ricard India Private Limited |
| PW | Price Waterhouse |
| PWCALLP | Price Waterhouse Chartered Accountants LLP |
| RF | Revolving Fund |
| RO | Reverse Osmosis |
| SC | Scheduled Caste |
| SDG | Sustainable Development Goals |
| SHG | Self Help Group |
| SRI | System of Rice Intensification |
| SRLM | State Rural Livelihood Mission |
| SST | Sir Syed Trust |
| ST | Scheduled Tribe |
| SWI | System of Wheat Intensification |



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Executive Summary

Pernod Ricard India Private Limited (PRIPL) has been implementing various interventions for betterment of the local communities in & around their geographical presence. PRIPL engaged PW to carry out the impact assessment of its **CSR project 'SRIJAL' with the objective to evaluate the impact created on the local communities** during the project period of 2019 to 2022.

The scope of work includes understanding the project implementation plan and 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. Framework used was Inclusiveness, Relevance, Efficiency, Convergence, and Sustainability framework (the 'IRECS') as agreed with the Management. The objective of the study was to assess the outcomes and impact created on the stakeholders covered under the project and provide recommendation on the project performance for Management's evaluation. Based on the nature of project, a mixed methodology method was adopted. Interactions were planned for all projects based on the study methodology after mapping the key stakeholders.

Pernod Ricard India Private Limited, in collaboration with **Sir Syed Trust (SST)** as its implementing partner, launched the **SRIJAL project in Dera Bassi block of SAS Nagar district (erstwhile Mohali district) in Punjab in 2019**. The aim was to create positive change among the underserved communities by supporting them to enhance their income capacity through natural resource management and livelihood development activities. The project was able to reach 6,672 beneficiaries out of which 972 were direct and 5,700 are indirect over the 3 years.

As part of the impact assessment study, a total of **211 project beneficiaries were surveyed** along with **12 qualitative interactions** with key project stakeholders.

Key Findings:

Water conservation activities

- Out of the 211 respondents covered during the study, 161 respondents i.e., 76% reported of being aware of the water-related project activities undertaken by the SRIJAL project. The project supported in construction/ renovation of farm ponds in their villages along with establishing check dams over the stream flowing through the respective villages to allow stagnancy of surface water which then can be used for irrigating the agriculture fields through lift irrigation. The project also provided sprinkler systems to the local farmers to allow efficient utilisation of water for irrigation.
- Availability of farm ponds in their vicinity, alternate option to lift water from check dams, and use of sprinkler irrigation have **helped the farmers save significant amount of time in irrigating their land**.

| Parameter | Pre intervention | Post intervention | % change |
|--|------------------|-------------------|----------|
| Average time required to irrigate 1 acre | ~7 hours | ~4 hours | ~43 |

It was also reported by the farmers that they provide around 8-9 irrigations in a year. Thus, these project support have **allowed them to save a lot of time which they could now use to dedicate to other household activities such as feeding livestock**.

- Besides leading to reduced time required for irrigation, **the project activities has also led to reduced power consumption during irrigation**. Earlier, respondents shared that due to power cuts, it took more than 10 hours to irrigate one acre of land and many times, **they had to stay at their fields throughout the nights as electricity was available only during those hours**. However, with improved access to water sources, farmers could now irrigate their fields in a shorter time without much hassle resulting from power cuts. Also, the life of their electric pumps has also improved as they now have to run for lesser hours.

- Additionally, 16% (n=161) of the respondents reported that there is improvement in the groundwater levels in their fields due to the project intervention. It was reported that **only the respondents having land near the farm ponds or check dams have witnessed such change in their groundwater levels.** The difference in groundwater levels as reported by the two sets of beneficiaries (based on their response) is reported below:

| Parameter | Pre intervention | Post intervention | % change |
|--|------------------|-------------------|----------|
| Average groundwater level among beneficiaries who have reported improvement (n=26) | 404 feet | 356 feet | -11.88 |
| Average groundwater level among beneficiaries who have reported decline (n=135) | 399 feet | 445 feet | 11.52 |

- However, 32% (n=161) of the respondents reported that **they had no benefit** because of the project interventions. This can be attributed to the fact that recharging of groundwater takes multiple years. Since, it has only been 3 years since the structures were created, their impact on the groundwater level is yet to be seen. Thus, many of the respondents have not realised the benefits of these structures as of yet.

Promotion of sustainable agriculture

- 87% (n=70) reported of receiving training around good agricultural practices. Upon enquiring about the practices which were promoted under the project, the respondents reported that the trainings focused on System of Rice Intensification (SRI), System of Wheat Intensification (SWI), Direct Seeding of Rice (DSR), manufacturing of organic fertilizers and pesticides, intercropping etc.
- 81% (n=70) reported that the project support has helped them in reducing usage of chemical fertilizers and pesticides. The trainings provided under the project on Good Agricultural Practices (GAP) that included SRI (Systemic Rice Intensification), SWI (Systemic Wheat Intensification) and manufacturing of organic fertilizers such as vermicompost, jeevamrut (cow dung manure) and bio-pesticides such as panchpatrikaya, brahmastra, etc. **have helped them reduce their dependence on chemical inputs.** Many of the respondents reported during the FGDs that they have **started dedicating some portion of their land (on an average around 0.5-1 acre) to organic cultivation** using the locally made bio-inputs.
- Another 29% of the respondents reported of receiving agri-equipment support in the form of super seeders (used for paddy residue management), DSR machine, laser leveller, etc. The project supported the farmers in **getting better access to these machines by establishing a rental model by collaborating with local machine owners.** The project also provided monetary support to the farmers in the form of half of the rent associated with hiring of the machines.
- Promoting the use of agri-equipments such as DSR machines, Super Seeders, etc. have also helped the farmers in reducing their dependence on manual labour. Earlier, farmers used to practice transplantation of paddy which is highly labour intensive and cost around INR 4,000 per acre. Transplantation of paddy also requires very high-water usage making it resource intensive. The project introduced the DSR machines which not only **reduced water usage in paddy cultivation but also helped in decreasing the cost of sowing** to INR 2,500 per acre since farmers didn't need to prepare nurseries and transplant paddy. It is to be noted that the cost of hiring a DSR machine is INR 2,500 per acre, but the project also provided with 50% cash support to the farmers which meant they only had to incur INR 1,250 per acre for paddy sowing which is a **decrease of almost 69% from before.** Post the closure of the farmers, farmers have to incur a cost INR 2,500 per acre for using DSR machines which is a decrease of around 38% from before.
- The project also promoted the **use of super seeders which has helped the farmers find an alternative to paddy residue burning.** Although it costs INR 1,200 (with project support) to operate super seeder over one acre of land, the respondents shared that they are more than happy to spend this amount as it relieves them of the burden of managing paddy residues. It was reported that the **farmers have continued using super seeder** by incurring a cost of INR 2,400 per acre even after the project has closed.

Community institution development


- 82% (n=112) of SHGs reported receiving training on financial management. SHGs underwent training on inter-loaning, essentially a form of financial management. SHG members consistently saved INR 25 and INR 50 weekly, accumulating substantial sums. SHG members shared that on an average, an SHG linked with SRLM has more than INR 2 lakhs for money at their disposal which they use for providing low-interest loans to the members.
- 94% (n=112) of SHG members having reported availing low-interest loans for construction/ repairment of houses, education, livestock, and material purchases. One major highlight is the provision of loans with a minimal interest rate of 12% per year, an improvement from the past when respondents had to borrow from money lenders at a 24% interest. This not only made managing finances easier but also relieved them from the stress of quick repayments.
- 34% (n=112) i.e., 38 respondents stated that inter-loaning through SHGs helped increase their household income and savings in the family. Respondent could invest more in agriculture in the form of better seeds and fertilizers/ pesticides, leading to improved crop production and more profits. Many of the SHG members have also taken up an additional livelihood activity with the support of the SRIJAL project. They have ventured into bag manufacturing and candle making, skills learned through training, adding another stream of income.
- 84% (n=112) of respondents highlighted that although activities such as candle making, bag making, and vermicompost manufacturing were introduced- under the SRIJAL project, but they require the necessary market linkages to be able to make profits out of these activities. Bags were produced on an order basis, typically one or two bags in a month. Candle sales primarily occurred during the Diwali festival while the SHG making vermicompost can sell products worth only INR 5,000-6,000 per year. **The respondents** expressed that if these products were linked to proper markets, substantial savings could be generated.

Ensuring safe drinking water

- 15 respondents shared that they are part of the 'Balmiki Swach Jal Samiti', a community institution formed combining the members of 3 SHGs and responsible for the management of the RO Unit. The Jal Samiti then took up the business of supplying safe drinking water to the villagers in campers (15L capacity). Their sales strategy includes offering campers at INR 20 with an additional cost of INR 30 for transportation provided.
- The Jal Samiti incurs a cost of around INR 1,500-1,700 for electricity and INR 2,000-3,000 every 6 months for servicing of the RO unit. It was reported that the business is **making a profit of around INR 1500-2000 per month** after incurring all the expenses.

Key Recommendations:

- Introduction of horticultural crops such as vegetables and fruits and promoting agroforestry can help the farmers shift away from the paddy-wheat system. Farmers would require capacity building support along with input and marketing support to start cultivating the aforementioned crops.
- The project may look to build capacities of the local farmers on production of bio-inputs and also, can promote a collective bio-resource production centre to not help the local farmers get access to quality bio-inputs but also, establish enterprise around production and marketing of bio-inputs.
- The project may plan to capacitate the community institutions (SHG/ Farmer group/ Water management group) by providing them with the monetary and capacity building support to take up the necessary work to keep the structures functioning in the long term.
- The project may help the SHGs reach out to prospective buyers by providing them with training on branding and marketing and, through helping them get more exposure by attending various trade fairs/ expos/ saras melas, etc.
- Project can also motivate the farmers to take up maize cultivation to produce silage which is a highly nutritious livestock feed. It was also recommended by the Agriculture Development Officer of the SAS



Nagar district that there is dearth of silage in the local markets and if, any local group (enterprise) starts producing and marketing silage to the nearby areas (in and around Dera Bassi), it can be a highly lucrative business. The farmers would need the technical guidance and access to the necessary inputs to start cultivating maize at scale and produce and market silage to livestock owners.

- Project has contributed towards creating linkage between the machine owners and the small and marginal farmers, supporting the farmers to establish custom hiring centres to purchase the necessary machines leveraging government schemes can help promote farm mechanisation among small and marginal farmers. Farmer groups can be formed to manage the custom hiring centres and take ownership of the machines and establish a rental model among themselves to use the machines.

A detailed analysis of the assessed impact of all the interventions can be found in the [Detailed findings and recommendations section](#), and recommendations can be found in the section titled [Recommendation](#) 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 programmes. All these programmes are designed in a manner that they can contribute towards the SDGs and national priorities.



1.2. About the project

Dera Bassi block which lies in the south-eastern part of Punjab is situated at around 30 km away from state capital, Chandigarh. The region is largely agrarian with significant presence of large-scale industries. Local communities are dependent on agriculture and labour work in industries to earn their livelihoods. In recent years, irrigation for agriculture has become a serious challenge for the local communities due to depleting

groundwater resources and increased pollution in surface water resources. This along with high dependence on chemical inputs for agriculture has led to agriculture becoming less remunerative for the small and marginal farmers of the region.

Pernod Ricard India Private Limited, in collaboration with Sir Syed Trust (SST) as its implementing agency, initiated the SRIJAL project in Dera Bassi block of SAS Nagar district (erstwhile Mohali district) in Punjab with the aim to create positive change among the underserved communities by supporting them to enhance their income capacity through natural resource management and livelihood development activities.

Figure 1: Overview of the SRIJAL project

| Project location | Project Duration | Project Beneficiaries |
|---|---------------------------------------|--|
| 20 villages of Dera Bassi block of SAS Nagar (Mohali) district. | June 2019- December 2022 (3 years) | 6,672 beneficiaries out of which 972 were direct and 5,700 are indirect. |

Source: MoU and project closure report shared by Pernod Ricard

As understood from the desk review of the project documents shared by Pernod Ricard, the SRIJAL project focused on creating awareness around water conservation among the local communities and promoting groundwater recharge by establishing/ repairing traditional water harvesting structures. The project also focused upon enhancing the livelihood conditions of the local communities by providing them with training and resources to strengthen their existing livelihoods and take-up alternate livelihood options. In addition to this, the project also worked on creating access to safe drinking water among the local communities.

Figure 2: Key focus areas under SRIJAL project



1.3. About the implementing agency¹

Sir Syed Trust set up in 2008, is a non-profit organization, committed for the development of poor and marginalized people, emphasizing on the socio-economic backward communities, women, and children, by strengthening community-based organizations directly and through networking across Alwar in Rajasthan, Ayodhya in Uttar Pradesh, SAS Nagar in Punjab & Sonipat, Nuh and Gurugram in Haryana. SST envisages that poor and disadvantageous community groups are mobilised, empowered, and enabled to earn their livelihoods on sustainable basis and able to live a dignified life. SST works to promote people’s institutions /collective institutions (cooperatives, producer organization). These institutions help to negotiate in the market, procuring collective inputs and access to their entitlements to government schemes.

¹ Website of Sir Syed Trust - <https://www.sirsyedtrust.com/>

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 Sir Syed Trust (SST) for the project
- Project annual report project
- Beneficiary data of project

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** (both quantitative and qualitative) was deployed to collect data from the key stakeholders. While collecting quantitative data, in-person individual interviews with the beneficiary households were conducted whereas to conduct qualitative interactions, Focus Group Discussions (FGD), In-Depth Interviews (IDI), and Key Informant Interviews (KII) were carried out.

Basis the data shared by Sir Syed Trust (SST), 789 direct beneficiary households across 24 villages were covered under the project which was considered to be the universe for the impact assessment study.

A **sample of 211** was estimated at 90% confidence level and 5% margin of error using the following formula

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

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 ensured that at least 10 samples were covered under each of the 4 themes. The total sample size of 211 was proportionately distributed across the 4 themes and the 7 selected villages in the following manner.

| Project Villages | Total Sample Size |
|------------------|-------------------|
| Bhagsi | 30 |
| Gholu Majra | 17 |
| Kheri Gujjar | 36 |
| Samgauli | 31 |
| Sundaran | 24 |
| Tarak | 45 |
| Rampur Behal | 28 |
| Total | 211 |

Additionally, the following stakeholders as shown in the below table were interacted as part of the qualitative research.

| Stakeholder | Type of interaction | Total |
|--|---------------------|-------|
| Community members | FGD | 6 |
| Panchayati Raj Institution (PRI) members | IDI | 3 |
| SST's Implementation Team | IDI | 1 |
| Government officials | KII | 2 |

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 along with recommendations of the impact assessment study of Project SRIJAL as per each of the activities and interventions.

3.1. Profile of the respondents

Among the 211 respondents, 47% were male, while 53% were female across the six villages. The average age of the respondents was 44 years. Notably, 52% fell within the age bracket of 40-59, followed by 28% in the age bracket of 20-39.

Examining the education levels, 24% of the respondents had completed 10th grade (secondary), and an additional 12% had completed 12th grade. 15% reported having no formal education. The below graphs illustrate the demographic and educational characteristics of the surveyed population.

Figure 3: Gender distribution of the respondents (n=211)



Figure 4: Age distribution of the respondents (n=211)

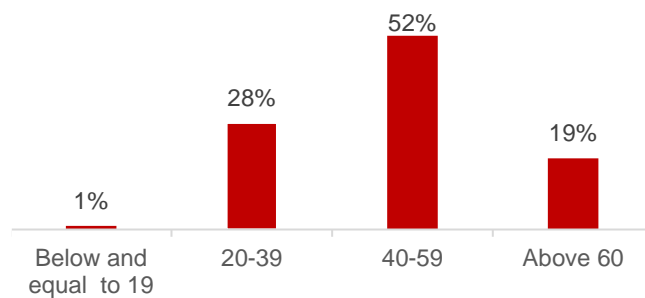
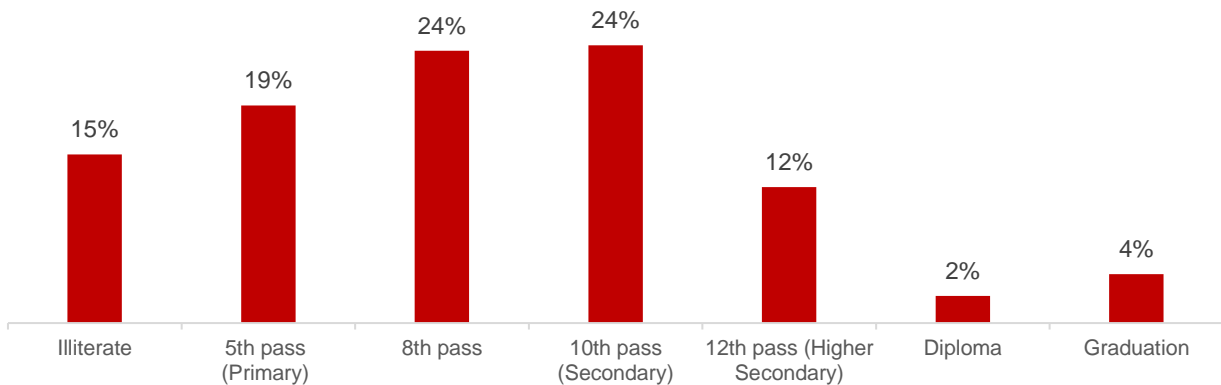


Figure 5: Education level of the respondents (n=211)



62% (n=211) of respondents were from the General category, 29% from Scheduled Caste, and 9% from Other Backward Caste as responded by the beneficiaries. Inquiring about the chief breadwinner in households, 49%(n=211) identified themselves as the primary earners, while 51% did not. Among those who didn't, 98%(n=108) specified the husband as the chief breadwinner and 2% reported their father as the chief bread winner of the household.

Figure 6: Social category of the respondents (n=211)

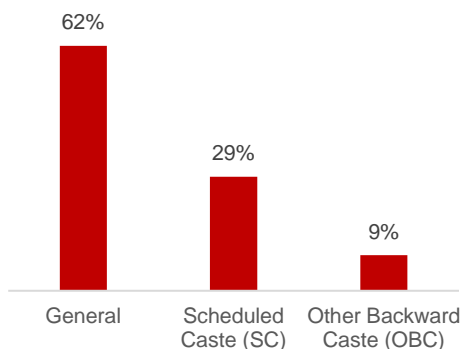
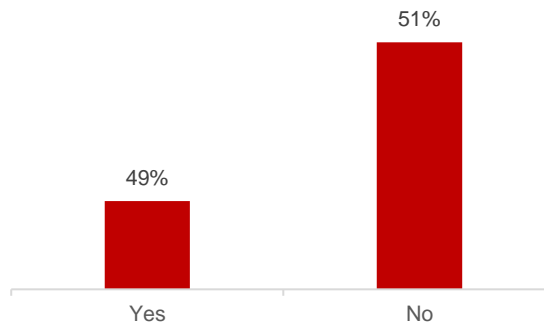


Figure 7: Chief bread winner of the respondents (n=211)



Agriculture was reported as the predominant livelihood of the respondents in the six villages as 76% (n=211) of the respondents reported being cultivators. Punjab region being part of the northern plains and having irrigation facilities at a large scale, it is only natural that the local communities will pursue agriculture and allied activities as their primary source of income. It was also understood from the discussions with the local communities that on **an average a respondent owned around 4 acres of cultivable land** with almost all the land having irrigation coverage. Although there are many households in the project villages with higher land ownership, the SRIJAL project targeted only the small and marginal farmers for providing the various support. It was **common for the small and marginal farmers to take land on lease to the tune of 20-25 acres in average from the large farmers (absentee farmers²) at a yearly rate of INR 50,000 per acre.**

In addition to agriculture, daily wage labour was also an important source of income. 12% of the respondents reported of working as unskilled non-agricultural laborers and 10% as agricultural laborers. Only 2% of the respondents reported salaried employment as their primary source of income.

In addition to primary income, many of the households also have an alternate income source. **47% (n=211) of the respondents i.e., 100 respondents reported of having an additional income source.** For secondary income sources, 75% (n=100) reported of being engaged in unskilled non-agricultural labour, while 24% were involved in animal husbandry. As most of the respondents have less than 5 acres of land ownership, it becomes important that they have additional income source. And **with the Dera Bassi block having several industries, many of the family members from the respondent households opt to work as industrial labour (non-agricultural labour).**

Figure 8: Primary source of income (n=211)

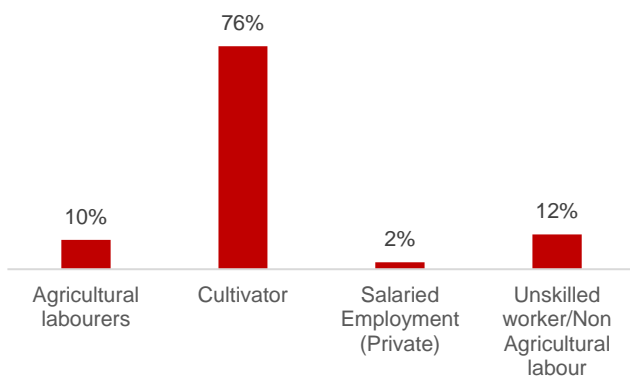


Figure 9: Alternative source of income (n=100)



² Farmers who don't practice agriculture but gives their land out on lease to other farmers.
Impact Assessment of Srijal project

3.2. Water conservation activities

3.2.1. Need for the intervention

It was understood through discussions with the local communities that they have been facing challenges with accessing water for irrigation due to depleting groundwater levels. It was stated by the local farmers that the depth of groundwater levels has been increasing with every year and due to which the farmers have to re-dig their borewells to increase their pumping depths. In villages such as Tarak and Kheri Gujjar, groundwater level was reported to be at a depth of more than 700 feet. Additionally, the local farmers also reported that the seasonal streams (*nalas*), from which they used to lift water into their agriculture fields, have become highly polluted making the water unsuitable to be used for irrigation. Limited availability of surface water bodies (ponds, tanks, etc.) in their villages mean the local farmers were unable to store rainwater for their use.

Reduced availability of water for irrigation has led to added pressure on the local farmers as they have to run their electric pumps for longer duration. Although electricity for agriculture purposes is highly subsidised by the state government, the farmers however, have to spend more hours on the field irrigating their land. Additionally, long hours of pumping put tremendous pressure on their electric pumps leading to reduced lives of the machines.

3.2.2. About the intervention

As understood from the project documents, the SRIJAL project identified these challenges and designed an intervention focusing on improving groundwater resources as well as enhancing the storage capacities of surface water resources. The project conducted extensive awareness drive for raising awareness about the need of water conservation and about promotion of water saving strategies practices and technologies. SRIJAL also contributed towards renovation of village level ponds, construction of check dams and improving environment around these ponds and dams. Several artificial recharge units (injection wells³) were also installed in selected ponds for artificial recharge and reducing evaporation losses.

Below is a snapshot of the different activities done under the SRIJAL project.

| Water Conservation | Activities |
|--|---|
| Creation of surface water storage capacity | Construction/ renovation of farm ponds |
| Creation of ground water recharge structure | Construction of check dams and recharge well |
| Promotion of water efficiency in agriculture | Water efficient irrigation practice through sprinkler irrigation, laser levelling, farm bunding |

3.2.3. Impact of the intervention

Out of the 211 respondents covered during the study, 161 respondents i.e., 76% reported of being aware of the water-related project activities undertaken by the SRIJAL project. Upon inquiring about the respondents' awareness about the different types of water-related activities, the following responses were recorded as illustrated in the graph below.

The majority of the respondents i.e., 54% (n=161) reported that the project has supported in construction/ renovation of farm ponds in their villages. The project through discussion with the local communities and Gram Panchayat members identified community-owned low-lying lands to develop farm ponds. The basic objective behind constructing farm ponds was to **capture rainwater and allow increased percolation into the below ground aquifers to improve the groundwater levels**. In certain cases where farm ponds already existed but their capacity to store water had reduced due to siltation and destruction of the boundaries, the **project with the help of the Gram Panchayat conducted desiltation and created new embankments to improve water retention capacity of the ponds**. In the Bhagsi village, the project renovated 3 existing farm ponds by increasing their depths through desiltation and improved their boundaries to reduce water run-off and

³ An injection well is used to percolate surface water into the ground to improve ground water levels.
Impact Assessment of Srijal project

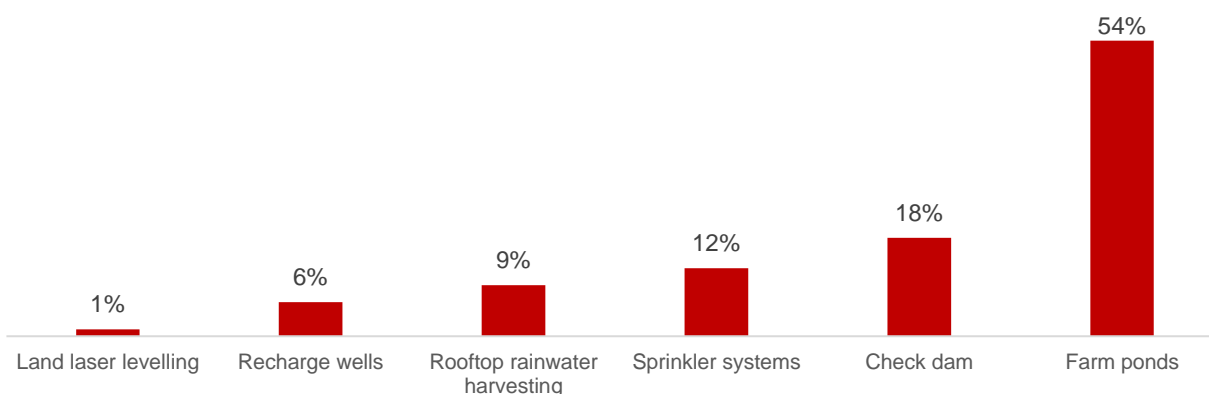
sedimentation. The project collaborated with the Block administration to leverage the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) funds available at the Gram Panchayat level to cover the labour costs associated with pond construction/ renovation. This also allowed for increased daily wage opportunities for MGNREGA workers of the villages. As reported by SHG women who worked as MGNREGA workers, earlier they only used to get around 50-60 days of job work in a year but post the project, they get their full quota of 100 days of employment in a year.

Additionally, 18% of the respondents also reported of the project establishing check dams in their villages. As per the information shared by the SST team, the project created 6 check dams to improve availability of water for irrigation. It was reported by the respondents in Kheri Gujar and Gholu Majra villages that the project established check dams over the stream flowing through the respective villages to allow stagnancy of surface water which then can be used for irrigating the agriculture fields through lift irrigation.

Another 12% of the respondents reported of receiving sprinkler systems through the project to allow efficient utilisation of water for irrigation. 9% of the respondents also reported of the project supporting them to set-up rooftop rainwater harvesting system in their houses. It was shared by the recipients that the main purpose of this system was to promote artificial recharge of the groundwater resources by redirecting stored rainwater into the ground through seepage holes.

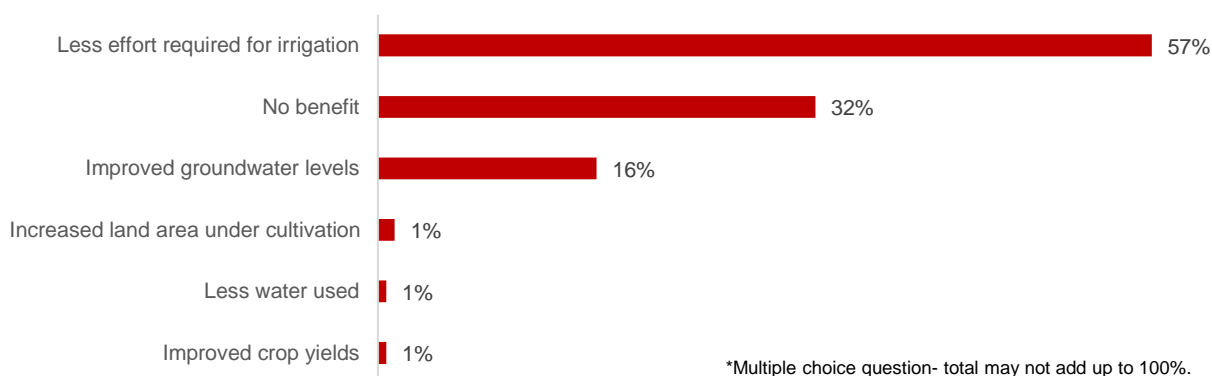
The project also established several recharge/ injection wells to allow increased percolation of rainwater into ground level aquifers. 6% of the respondents reported that they are aware of the project establishing recharge wells in their villages. Lastly, 1% of the respondents reported that the project has supported them to adopt laser levelling of their lands before the kharif season. Levelling of land is known to reduce water usage during land preparation as it allows for uniform distribution of water over the land. As reported by the local farmers, it costs around INR 1,000 to level one acre of land which was reduced by half as the project provided with 50% of the cost of levelling along with creating access to laser levellers.

Figure 10: Support received by the respondents (n=161)



These activities undertaken by the SRIJAL project has helped the local communities in several ways. The below graph shows how the respondents have benefitted from the support provided under the SRIJAL project in promoting water-related activities:

Figure 11: Benefits reported by the respondents due to SRIJAL project (n=161)



*Multiple choice question- total may not add up to 100%.

As reported by 57% (n=161) of the respondents, the water-related activities have helped them to reduce the effort required to irrigate their lands. **Availability of farm ponds in their vicinity, alternate option to lift water from check dams, and use of sprinkler irrigation have helped the farmers save significant amount of time in irrigating their land.**

| Parameter | Pre intervention | Post intervention | % change |
|--|------------------|-------------------|----------|
| Average time required to irrigate 1 acre | ~7 hours | ~4 hours | ~43 |

It was reported by the farmers that they provide around 8-9 irrigations in a year. Thus, these project support have **allowed them to save a lot of time which they could now use to dedicate to other household activities such as feeding livestock.**

Besides leading to reduced time required for irrigation, **the project activities has also led to reduced power consumption during irrigation.** As reported by the respondents, **borewell is the major source of irrigation in the area. Almost all the borewells are run by electric pumps leading to high dependence on power grid.** Earlier, respondents shared that due to power cuts, it took more than 10 hours to irrigate one acre of land and many times, **they had to stay at their fields throughout the nights as electricity was available only during those hours.** This used to put severe stress on the farmers' health as well as on their electric pumps as it had to run for more longer durations. However, **with improved access to water sources, farmers could now irrigate their fields in a shorter time without much hassle resulting from power cuts.** Also, **the life of their electric pumps has also improved** as they now have to run for lesser hours.

Figure 12: A farmer lifting water from the damaged check dam in Kheri Gujjar



Additionally, 16% (n=161) of the respondents reported that there is improvement in the groundwater levels in their fields due to the project intervention. It was reported that **only the respondents having land near the farm ponds or check dams have witnessed such change in their groundwater levels.** This is quite in contrast of the consensus in the project area as well as in other areas of Dera Bassi block. The majority of the other respondents whose lands are not near the check dams/ ponds have reported that there has been decline in the groundwater levels which is the case with most of the areas in Dera Bassi and Punjab as a whole. **The Agriculture Development Officer of the SAS Nagar (Mohali) district reported that there is a similar trend across the district where the groundwater level has been on the decline since last 15-20 years due to overexploitation.** In such a scenario, even a slight improvement in the groundwater level can be considered as a significant impact. The difference in groundwater levels as reported by the two sets of beneficiaries (based on their response) is reported below:

| Parameter | Pre intervention | Post intervention | % change |
|--|------------------|-------------------|----------|
| Average groundwater level among beneficiaries who have reported improvement (n=26) | 404 feet | 356 feet | -11.88 |
| Average groundwater level among beneficiaries who have reported decline (n=135) | 399 feet | 445 feet | 11.52 |

However, 32% (n=161) of the respondents reported that **they had no benefit** because of the project interventions. This was seen majorly in the case of respondents who reported of receiving support in the form of farm ponds, check dams, and recharge wells. As farm ponds were established in community lands, **only the farmers having land near to the ponds were able to use pond water for irrigating their land**. Also, in the case of the check dams, **on an average one check dam could be used to irrigate around 15-20 acres of land** as per the participants of the FGDs. However, as mentioned above, the **primary objective of establishing these water structures was to recharge the groundwater aquifers which generally takes multiple years** to impact at a larger scale. Since, it has only been 3 years since the structures were created, their impact on the groundwater level is yet to be seen. Thus, many of the respondents have not realised the benefits of these structures as of yet. Many respondents understood this dynamic and shared during the FGDs that **they are hopeful that these structures would benefit them in the upcoming years**.

However, it was observed that there is lack of clear ownership of the water infrastructures such as farm ponds and check dams formed under the project. Although some of the Gram Panchayats have showed their willingness to take up the responsibility of maintaining and repairing the structures, but the Gram Panchayats have their own challenges in terms of limited fund availability and changing leadership. The check dams constructed in Kheri Gujjar and Gholu Majra villages got damaged during the monsoon floods occurring in the area in mid-2023. **Due to the lack of ownership, the check dams have remained non-functional ever since**.

Snapshot of the impact created by the water-related activities

The below table is based on the findings from the interactions with the local communities and government stakeholders.

| Activity | Outcome from the project activities (as reported) |
|--|--|
| Construction/ renovation of farm ponds | <ul style="list-style-type: none"> • Reduced time required for irrigation • Decreased consumption of electricity for irrigation |
| Construction of check dams and recharge well | <ul style="list-style-type: none"> • Improved shelf life of electric pumps |
| Sprinkler irrigation | <ul style="list-style-type: none"> • Reduced time required for irrigation • Decreased consumption of electricity for irrigation • Improved shelf life of electric pumps • Crop diversification |
| Laser levelling | <ul style="list-style-type: none"> • Reduced water usage |

3.3. Promotion of sustainable agriculture

3.3.1. Need for the intervention

Most of the farmers of the Dera Bassi block have been practising a chemical intensive dual cropping system based on paddy-wheat rotation for a long period of time. This has led to the soils of the region getting devoid of organic materials leading to high dependence on chemical inputs. Also, paddy being a water intensive crop has taken a huge toll on the local groundwater resources leading to severe water crisis in many areas of the state. With around 47% of the farmers in SAS Nagar (Mohali) district being small and marginal farmers having less than 5 acres of land, they have limited risk taking appetite and capacity to withstand climate vagaries, increased production costs, and market fluctuations. Due to this, the small and marginal farmers tend to keep on practising the same methods of agriculture even though those are leading to higher cost of cultivation, reduced availability of natural resources, and lesser profits.

3.3.2. About the intervention

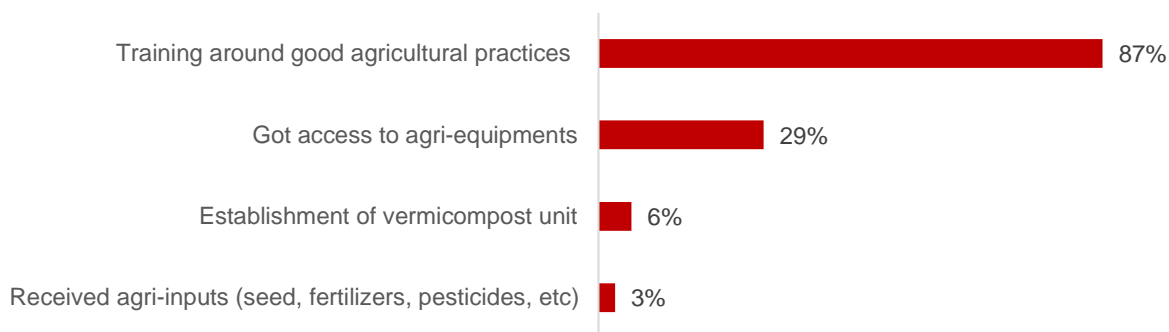
As mentioned in the project documents, SRIJAL project focused on improving the agricultural practices of the local farmers by providing them with the necessary trainings and input support to transition to sustainable

agriculture practices. It prioritised lowering water usage in agriculture and reducing dependence on chemical inputs. In addition to capacity building support, the farmers were helped with seeds, organic inputs, and agri-equipments to start their journey to shift to better agricultural practices.

3.3.3. Impact of the intervention

Out of the 211 respondents covered during the study, 70 respondents i.e., 33% reported of receiving support around adopting sustainable agriculture practices. The various support reported by the respondents are illustrated in the below graph:

Figure 13 Support received by the respondents (n=70)



*Multiple choice question- total may not add up to 100%.

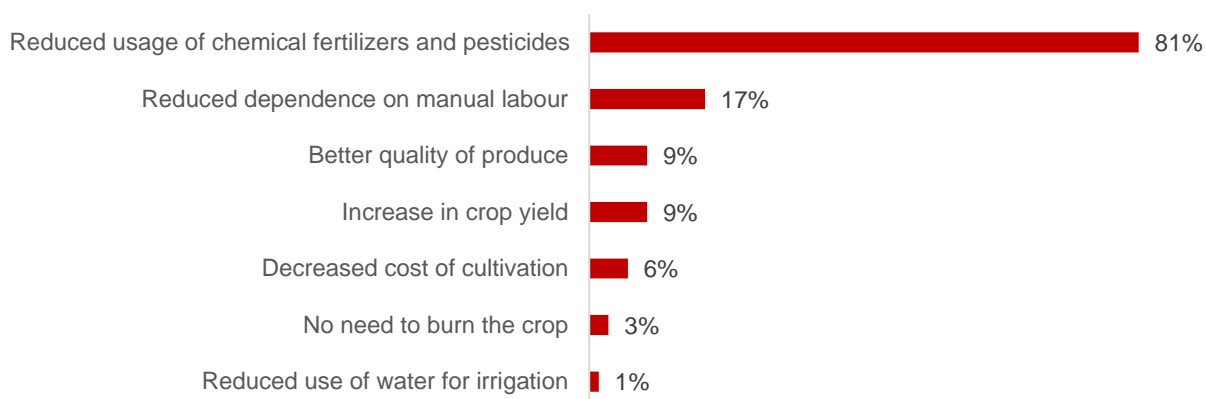
The majority of the respondents i.e., 87% (n=70) reported of receiving training around good agricultural practices. Upon enquiring about the practices which were promoted under the project, the respondents reported that the trainings focused on System of Rice Intensification (SRI), System of Wheat Intensification (SWI), Direct Seeding of Rice (DSR), manufacturing of organic fertilizers and pesticides, intercropping etc.

Another 29% of the respondents reported of receiving agri-equipment support in the form of super seeders (used for paddy residue management), DSR machine, laser leveller, etc. The project supported the farmers in **getting better access to these machines by establishing a rental model by collaborating with local machine owners**. The project also provided monetary support to the farmers in the form of half of the rent associated with hiring of the machines. For example, a super seeder is used for paddy residue management and sowing of wheat. This machine functions on the principle of in-situ crop residue management wherein the paddy residues are mixed within soil and at the same time, wheat seed also gets sown. This way the farmers don't need to burn the paddy residues to clear their fields for wheat sowing. On an average, a super seeder costs INR 2,200-2,500 per acre. **In order to promote adoption of this machine, the project opted for a cost sharing mechanism wherein half of the rent is paid by the project and other half is borne by the farmer.**

In addition to this, 6% of the respondents also reported of receiving vermicompost units under the project and another 3% of the respondents shared of receiving agri-inputs in the form of seeds for crops such as chilli and vegetables, organic fertilizers, and pesticides.

The respondents reported for benefitting a lot from the support provided under the SRIJAL project. The below graph shows how the respondents have benefitted from the activities done under the SRIJAL project to promote sustainable agriculture:

Figure 14: Benefits received by the respondents due to SRIJAL project (n=70)



*Multiple choice question- total may not add up to 100%.

81% (n=70) reported that the project has helped them in reducing usage of chemical fertilizers and pesticides. The trainings provided under the project on Good Agricultural Practices (GAP) that included SRI (Systemic Rice Intensification), SWI (Systemic Wheat Intensification) and manufacturing of organic fertilizers such as vermicompost, jeevamrut (cow dung manure) and bio-pesticides such as panchpatrikaya, brahmastra, etc. have helped them reduce their dependence on chemical inputs. Many of the respondents reported during the FGDs that they have started dedicating some portion of their land (on an average around 0.5-1 acre) to organic cultivation using the locally made bio-inputs. The reason behind doing organic cultivation only in small portions of land is the short-term risks associated with not using chemical inputs. The respondents shared that it is common to get lower yields in organic cultivation during the initial 2-3 years as the soil requires time to adapt to non-chemical methods. Also, the local farmers lack the know-how to deal with pest attacks without the use of chemical pesticides thus, making them susceptible to crop failure in the case of organic cultivation. Getting access to quality bio-inputs has been an issue which prevents farmers from practising organic/ natural farming. However, the local farmers also shared that with time and further training sessions they would become more capable to deal with such pest attacks without the use of chemical pesticides and therefore, plan to keep shifting more land to organic/ natural cultivation gradually. It was also reported that organic cultivation is much more sustainable as it requires lesser cost of cultivation and also, the quality of soil and groundwater doesn't get affected (which is the major problem with chemical intensive farming methods). 6% of the respondents reported that their overall cost of cultivation (on annual basis) has reduced due to adoption of Good Agricultural Practices (GAP). But since adoption of organic cultivation has been done at a very rudimentary level, its impact on the annual cost of cultivation of a farmer is not much significant until now.

The adoption of Good Agricultural Practices (GAP) has also led to improved quality and yield of crops among some respondents as reported 9%. Quality and yield of crops are dependent upon various factors such as seasonal climate, occurrence of pest attacks, availability of labour and agri-equipments. And with Punjab facing severe water crisis and weather anomalies (floods and unseasonal rains) year-on-year, even maintaining the same level of quality and yield is seen as an achievement by most of the farmers.

Promoting the use of agri-equipments such as DSR machines, Super Seeders, etc. have also helped the farmers in reducing their dependence on manual labour. It was analysed from the quantitative data (n=70) and validated through the qualitative interactions that almost all the respondents carry out agriculture in primarily two seasons i.e., kharif (June to October) and rabi (November to April) with most of them following the below mentioned cropping pattern:

| Months | J | F | M | A | M | J | J | A | S | O | N | D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Paddy (Grown by 100% of the respondents) | | | | | | | | | | | | |
| Potato (Grown by 30% of the respondents) | | | | | | | | | | | | |
| Wheat (Grown by 100% of the respondents) | | | | | | | | | | | | |
| Mustard (Grown by 50% of the respondents) | | | | | | | | | | | | |

| Months | J | F | M | A | M | J | J | A | S | O | N | D |
|-----------------------------|---------------------------------------|---|---|---|---|---|---|------------|---|---|---|---|
| Land preparation and sowing | Intercultural operations ⁴ | | | | | | | Harvesting | | | | |

Earlier, farmers used to practice transplantation of paddy which is highly labour intensive and cost around INR 4,000 per acre. Transplantation of paddy also requires very high-water usage making it resource intensive. The project introduced the DSR machines which not only **reduced water usage in paddy cultivation but also helped in decreasing the cost of sowing** to INR 2,500 per acre since farmers didn't need to prepare nurseries and transplant paddy. It is to be noted that the cost of hiring a DSR machine is INR 2,500 per acre, but the project also provided with 50% cash support to the farmers which meant they only had to incur INR 1,250 per acre for paddy sowing which is a **decrease of almost 69% from before**. Post the closure of the farmers, farmers have to incur a cost INR 2,500 per acre for using DSR machines which is a decrease of around 38% from before.

The project also promoted the **use of super seeders which has helped the farmers find an alternative to paddy residue burning**. Although it costs INR 1,200 (with project support) to operate super seeder over one acre of land, the respondents shared that they are more than happy to spend this amount as it relieves them of the burden of managing paddy residues. It was reported that the farmers have continued using super seeder by incurring a cost of INR 2,400 per acre even after the project has closed.

Although the project has contributed towards creating linkage between the machine owners and the small and marginal farmers, many of the respondents also reported that they face difficulties in hiring agri-equipments like DSR machine, Super seeder, etc., on rent as the machine owners prefer to rent out to farmers having large land area.

Snapshot of the impact created by the sustainable agriculture activities

The below table is based on the findings from the interactions with the local communities and government stakeholders.

| Activity | Outcome from the project activities (as reported) |
|--|---|
| Training on Good Agricultural Practices (GAP) | <ul style="list-style-type: none"> Improved technical know-how among farmers Reduced dependence on chemical inputs |
| Providing access to agri-equipments | <ul style="list-style-type: none"> Reduced dependence on manual labour Elimination of crop residue burning Reduced water usage in paddy sowing |
| Input-support (vermicompost, bio-inputs, etc.) | <ul style="list-style-type: none"> Reduced dependence on chemical inputs |

3.4. Community institution development

3.4.1. Need for the intervention

Among the local communities of Dera Bassi, it is not common for the women folk to work in their own agricultural fields. Only in the case of households having no agriculture land are the women folk engaged in income generating activities mostly as daily wage labourers. The women folk although have a lot of time in their hands don't have the necessary opportunities to contribute towards their household economy. Due to their inactiveness in bringing income to their households, they also fail to share the same social status as their male counterparts within and outside their households. Lack of confidence and empowerment means limited involvement of the women members in their household decision making.

Access to low-interest credit has been a challenge for the households having no or marginal land. Local communities were largely dependent on local moneylenders for credit as getting loans from financial institutions like banks is seen as a tedious process.

⁴ Intercultural operations: weeding, fertigation, irrigation, etc.
Impact Assessment of Srijal project

3.4.2. About the intervention

SRIJAL project was dedicated to addressing the needs of local communities and empowering women through income augmentation, with a specific focus on Self-Help Groups (SHGs). The initiative involved training SHGs in inter-loaning, as well as providing skills development sessions in bag making, candle making, and enterprise promotion.

3.4.3. Impact of the intervention

It was reported that 53% (n=211) individuals are part of Self-Help Groups (SHGs) under the SRIJAL project. SHGs played a pivotal role as the main community organization across all six villages studied. Delving into the inception period of SHGs (n=112), 36% reported that their SHGs were formed two to three years ago, were formed more than three years ago.

Figure 15: Respondent being part of SHGs (n=211)

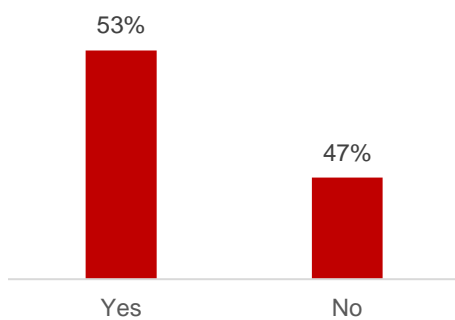
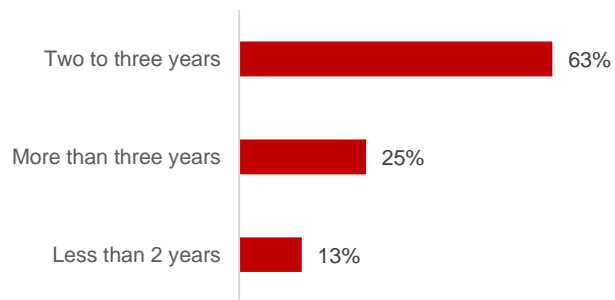
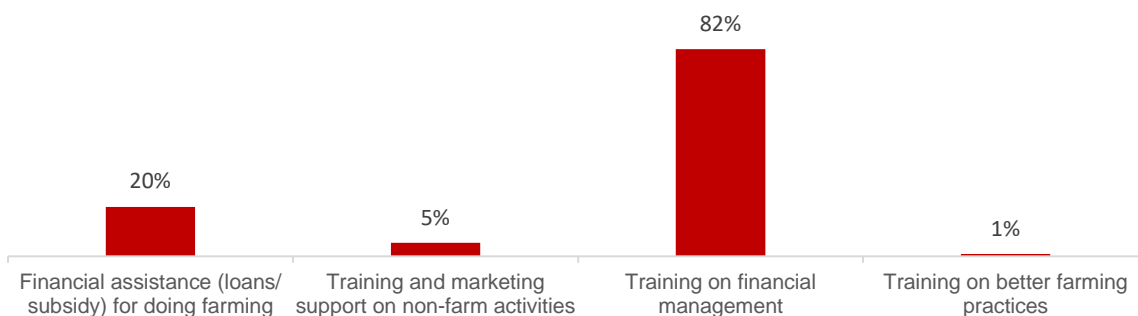


Figure 16: Formation of the SHGs (n=112)



Regarding support received, **82% (n=112) of SHGs reported receiving training on financial management.** Under the SRIJAL project, SHGs underwent training on inter-loaning, essentially a form of financial management. **SHG members consistently saved INR 25 and INR 50 weekly, accumulating substantial sums.** Many of the SHGs were also adopted under State Rural Livelihoods Mission (SRLM) which made them eligible to receive additional financial support in the form of Revolving Fund (RF) and Community Investment Fund (CIF). It was shared by the SHG members that **on an average, an SHG linked with SRLM has more than INR 2 lakhs for money at their disposal which they use for providing low-interest loans to the members.**

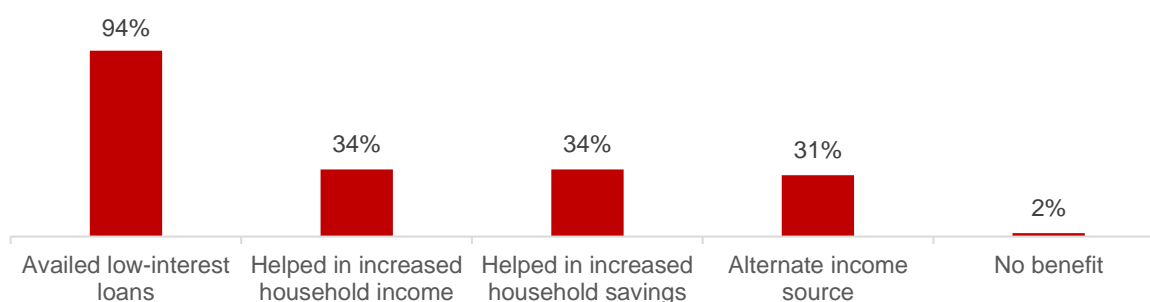
Figure 17 Support Received by the SHG members (n=112)



*Multiple choice question- total may not add up to 100%.

Upon enquiring about the benefits received by the respondents due to getting associated with SHGs, the following findings (as captured in the graph below) were reported.

Figure 18: Benefit received by respondents due to SRIJAL project (n=112)



*Multiple choice question- total may not add up to 100%.

94% (n=112) of SHG members having reported availing low-interest loans for construction/ repairment of houses, education, livestock, and material purchases. Community members shared how SRIJAL, especially through SHGs, has made a significant impact. One major highlight is the provision of loans with a minimal interest rate of 12% per year, an improvement from the past when respondents had to borrow from money lenders at a 24% interest. This not only made managing finances easier but also relieved them from the stress of quick repayments. Comparing this to regular microfinance, which still imposed the same high 24% interest but required land documents as security, it became clear why SHGs are preferred. SHGs offer a simpler way to get a loan without the hassle of complicated paperwork.

Through the FGDs, it was understood that although there are various sources available to the local communities to obtain loans, not every one of the sources are accessible due to various challenges associated with them. In the below table, the perception of the respondents (SHG members) on the different sources of credit available to them has been highlighted.

| Source of loan | Average rate of interest | Community perception |
|----------------------------------|--------------------------|--|
| Banks | 8-10% | Difficult to obtain loan as they ask for collateral and the documentation process is complicated. |
| MFI (Micro Finance Institutions) | 24% | Not many MFIs are available. Also, the rate of interest is quite high. |
| Local moneylenders | 24% (not fixed) | Although loan is easily available, but the rate of interest is high, and the payment terms are tedious. In many cases, these moneylenders exploit the local community through bullying and pressuring them to pay extra interests. |
| SHG | 12% | Easily accessible with low interest rates. No documents and mortgage required. |

Easier access to loans brought about a positive change in the community's economic activities. **34% (n=112) i.e., 38 respondents stated that inter-loaning through SHGs helped increase their household income and savings in the family.** Respondent could invest more in agriculture in the form of better seeds and fertilizers/ pesticides, leading to improved crop production and more profits. Many of the SHG members have also **taken up an additional livelihood activity with the support of the SRIJAL project.** They have ventured into bag manufacturing and candle making, skills learned through training from SRIJAL, adding another stream of income. This has also helped them to contribute towards their household income which they could not do before the project intervention.

| Parameter | Pre-Intervention | Post-Intervention |
|--|------------------|-------------------|
| Average annual income among the SHG members (n=38) | 0 | 7,722 |

In addition to increase income, **being part of the SHG also have helped the members attain good financial habits such as regular savings.** It was reported by the SHG members during the FGDs that earlier, they were

not able to save any money as they kept the extra money as cash at their home and the money used to get spent on random things. They shared that having a proper savings platform and that too at their village itself have helped them a lot to start saving money. **When asked how the members are utilizing the extra savings, the majority of the respondents i.e., 74% (n=38) reported using the money for loan repayment.**

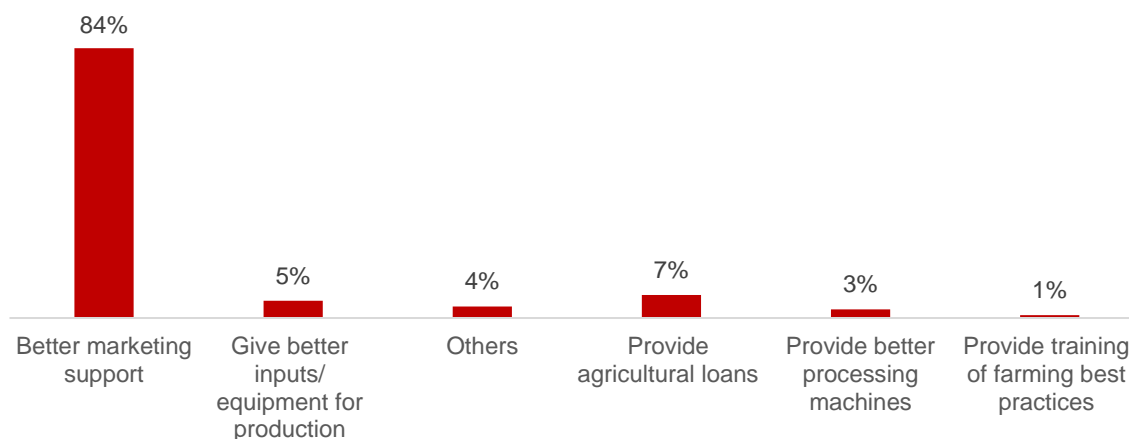
31% of the respondents mentioned that they got an alternate income source due to the support provided under the SRIJAL project. **As mentioned above, many SHG women have started activities such as bag manufacturing, candle making, and vermicompost production post receiving training under the SRIJAL project.** In Sundaran village, the SRIJAL team provided training to SHGs on bag making and candle making. Respondents shared that bags made by them are getting sold in the village at INR 150 with a margin of INR 50, and candles were typically sold during the Diwali festival. In Bhagsi, SHGs engaged in pond cleaning under the SRIJAL project, with one person earning INR 303 per day through MGNREGA. The linkage between MGNREGA and SHGs was facilitated by SRIJAL. In Kheri Gujjar, SHGs were involved in vermicompost manufacturing, selling the products for INR 10 per Kg. While in Samgauli Village, an SHG has ventured into the business of supplying safe drinking water (discussed in detail in the next section).

As illustrated in figure 19, 84% (n=112) of respondents highlighted that although activities such as candle making, bag making, and vermicompost manufacturing were introduced- under the SRIJAL project, but they require the necessary market linkages to be able to make profits out of these activities. Bags were produced on an order basis, typically one or two bags in a month. Candle sales primarily occurred during the Diwali festival while the SHG making vermicompost can sell products worth only INR 5,000-6,000 per year. The respondents expressed that if these products were linked to proper markets, substantial savings could be generated.

Snapshot of the impact created by the community institution development

The below table is based on the findings from the interactions with the local communities:

Figure 19 : Future support required by the SHGs (n=112)



*Multiple choice question- total may not add up to 100%.

| Activity | Outcome from the project activities (as reported) |
|----------------------------------|--|
| Training on financial management | <ul style="list-style-type: none"> Improved know-how among women related to finance Adoption of good financial practices |
| Access to low interest loans | <ul style="list-style-type: none"> Reduced dependence on local moneylenders Availability of money for investment purpose |
| Alternate income opportunities | <ul style="list-style-type: none"> Involvement in income generating activities Utilisation of free time |

3.5. Ensuring safe drinking water

With the villagers in Samgauli village in Dera Bassi facing scarcity of drinking water due to poor quality of groundwater, the SRIJAL project prioritised addressing this need of the community by establishing a Reverse

Osmosis (RO) Unit. The RO Unit comprising of an electric borewell was formed in an enterprise model wherein 3 SHGs in the village were given its ownership and responsibility of operations and maintenance.

Among the 211 respondents interviewed during the study, **15 respondents shared that they are part of the 'Balmiki Swachh Jal Samiti', a community institution formed combining the members of 3 SHGs and responsible for the RO Unit.** The Jal Samiti then took up the business of supplying safe drinking water to the villagers in campers (15L capacity). The Jal Samiti, with 40 campers received under the SRIJAL project and 15 campers purchased independently, is supplying water within and outside their village for events like marriages and small gatherings. Their sales strategy includes offering campers at INR 20 with an additional cost of INR 30 for transportation provided.

The Jal Samiti incurs a cost of around INR 1,500-1,700 for electricity and INR 2,000-3,000 every 6 months for servicing of the RO unit. It was reported that the business is making a profit of around INR 1500-2000 per month after incurring all the expenses. It was understood through the FGD with the Samiti and local communities **that not many households are purchasing water from the RO Unit as they find it costly.** They shared that they **buy water only during festivals/ social ceremonies when there are increased number of people at their houses.**

Although water-borne illness was quite prevalent in their village (as reported by respondents during FGD), people were not willing to purchase safe drinking water from the RO Unit. It was shared by the Samiti members that the majority of the **villagers lack awareness and knowledge to consider poor quality of water as a major issue and incur extra costs to obtain safe drinking water and that spending some extra money to obtain safe water can save them from incurring high medical costs due to illness.** Hence, the villagers are unwilling to purchase water from the RO Unit on a daily basis and rather depend upon their borewells and public supply for their drinking water. It shows that **there is need of creating awareness among the local communities related to water-borne diseases and how spending some extra money on procuring safe drinking water can help them avoid large expenses arising out of medical issues.**

Figure 20: RO Unit established in Samgauli village under SRIJAL project



3.6. Stories of change

Change story: 1 – Transformation through Farm Mechanisation

Kuldeep, a 50-year-old from Gholu Majra village lives with his family of four and owns 5 acres of land. In Kharif season, he used to grow paddy over 4 acres and dedicated 1 acre to vegetables. While in Rabi season, he used to grow wheat over 4 acres and mustard over the remaining 1 acre. Kuldeep harvests paddy using Combined Harvester in the early weeks of October which leaves him with a short window of two weeks for wheat sowing.

Earlier, in those two weeks, he had to do a lot of operations that included cutting paddy residue, cleaning the field, ploughing, and sowing wheat seeds. With no access to farm machinery, it put a lot of pressure on him and his family. Previously, he used to burn paddy residues as there was no viable option available. But after introduction of Super Seeders by the SRIJAL project, he could do the four activities: cutting paddy residue, cleaning of field, ploughing, and sowing simultaneously at a nominal cost of INR 2,400 per acre. Use of super seeders has relieved him of a lot of pressure as there is significant penalty levied by the Government of burning of crop residue. Super seeder also leaves him with a 10-day resting period as the land becomes ready for wheat cultivation within 3-4 days.

Change story: 2 – Journey of Laxmi Jal Samiti to become a Social Enterprise

In Samgauli village, members from three Self-Help Groups joined forces to create the Jal group, a small-scale enterprise, determined to change their community's story. The SRIJAL project helped the Jal Samiti to establish an RO-Unit to cater to the needs of safe drinking water among the villagers. The Jal Samiti took the onus of running the RO Unit and supplying safe drinking water in camper units to people in Samgauli and nearby villages.

Presently, the Jal Samiti fulfils 10 orders (average of 25 campers per order) in a month on an average. Although most of the orders are for social ceremonies and festivals, their enterprise has helped the local communities to procure safe water locally at minimal cost of INR 20 per camper unit (15L capacity).

The enterprise makes a net profit of INR 1,500-2,000 per month and it has accumulated a total of INR 18,000 in total after 2 years of operations. The Samiti uses this money to provide no-interest credit support to its members. In addition to the additional income for the Samiti members, this enterprise has helped them in gaining self-belief and confidence and also, attain more respect in their society.

Change story: 3 – Turning Challenges into Profit with SRIJAL Project

Harpreet, 58 years old, resides in Kheri Gujjar with his family. Faced with challenges like depleting groundwater table and polluted surface water resources, he was struggling to make enough income from his 3 acre of land to sustain his family.

With 90% of the cost covered, SRIJAL project provided mini-sprinklers for efficient irrigation and thus, easing the financial burden associated with taking borewells on lease from other farmers for irrigation. With the help of the sprinklers and the training support provided under the project, Harpreet shifted to vegetable farming from paddy cultivation. This shift has enabled him to overcome water scarcity as well as increase his income from agriculture. He shared that earlier, he used to earn INR 15,000 per acre in the Kharif season from paddy cultivation. However, post shifting to vegetable cultivation, he earns between INR 25,000-30,000 per acre in the Kharif season as the productivity of his land has increased with adoption of efficient irrigation techniques and vegetable providing higher returns than paddy.

3.7. IRECS analysis

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

| Parameter | Assessment from the study |
|----------------------|--|
| Inclusiveness | <ul style="list-style-type: none"> The SRIJAL project focused on the vulnerable communities of the society that included landless, small, and marginal farming households. Depleting water resources, declining soil quality, and dwindling land sizes have created many challenges for the local communities. The project identified their challenges and provided them with a range of support to improve their livelihoods status. 82% of the respondents have not studied beyond matriculation (class X) with 15% of the respondents being illiterate. The project has helped these respondents gain more exposure and awareness related to resource conservation and livelihood enhancement. Also, the project included both male and female as the beneficiaries without any gender-based inequalities. |
| Relevance | <ul style="list-style-type: none"> The local communities have been facing challenges with accessing water for irrigation due to depleting groundwater levels. It was stated by the local farmers that groundwater level has been depleting every year and due to which the farmers have to re-dig their borewells to increase their pumping depths. Also, limited availability of surface water bodies (ponds, tanks, etc.) in their villages mean the local farmers were unable to store |

| Parameter | Assessment from the study |
|---------------|---|
| | <p>rainwater for their use. The SRIJAL project identified these challenges and designed an intervention focusing on improving groundwater resources as well as enhancing the storage capacities of surface water resources.</p> <ul style="list-style-type: none"> • Most of the farmers of the Dera Bassi block have been practising a chemical intensive dual cropping system based on paddy-wheat rotation for a long period of time. This has led to the soils of the region getting devoid of organic materials leading to high dependence on chemical inputs. Also, paddy being a water intensive crop has taken a huge toll on the local groundwater resources leading to severe water crisis in many areas of the region. SRIJAL project focused on improving the agricultural practices of the local farmers to lower water usage in agriculture and reduce dependence on chemical inputs. • The women folk in the project villages didn't have the necessary opportunities to contribute towards their household economy. Due to their inactiveness in bringing income to their households, they also fail to share the same social status as their male counterparts within and outside their households. Thus, mobilising these women into SHGs and providing them with training on finance and livelihood have helped them gain confidence and empower themselves. |
| Effectiveness | <ul style="list-style-type: none"> • Construction of farm ponds and check dams have helped farmers reduce their dependence on groundwater resources. Distribution of sprinkler systems among the farmers have also helped in bringing efficiency in water usage. Availability of farm ponds in their vicinity, alternate option to lift water from check dams, and use of sprinkler irrigation have helped the farmers save significant amount of time in irrigating their land. The average time required to irrigate one acre of land has decreased from ~7 hours to ~3 hours. • Additionally, 16% (n=161) of the respondents reported that there is improvement in the groundwater levels in their fields due to the project interventions. It was only the respondents having land near the farm ponds or check dams who have witnessed such change in their groundwater levels. However, it is seen as a significant impact by the other villagers, and they shared that they are hopeful that the water infrastructures created under the project will help improve the groundwater levels in their village in the future. • The majority of the respondents i.e., 81% (n=70) reported that the project has helped them in reducing usage of chemical fertilizers and pesticides. The trainings provided under the project on Good Agricultural Practices (GAP) that included SRI (Systemic Rice Intensification), SWI (Systemic Wheat Intensification) and manufacturing of organic fertilizers such as vermicompost, jeevamrut (cow dung manure) and bio-pesticides such as panchpatrikaya, brahmastra, etc. have helped them reduce their dependence on chemical inputs. • The project introduced the DSR machines which not only reduced water usage in paddy cultivation but also helped in decreasing the cost of sowing from INR 4,000 per acre to INR 2,500 per acre. • The project also promoted the use of super seeders which has helped the farmers find an alternative to paddy residue burning. Although it costs INR 1,200 (with project support) to operate super seeder over one acre of land, the respondents shared that they are more than happy to spend this amount as it relieves them of the burden of managing paddy residues. • 94% (n=112) of SHG members having reported availing low-interest loans for construction/ repairment of houses, education, livestock, and material purchases. • Easier access to loans brought about a positive change in the community's economic activities. 34% (n=112) i.e., 38 respondents stated that inter-loaning through SHGs helped increase their household income and savings in the family. On an average, the respondents reported of earning INR 7,722 per year after joining the SHGs. |
| Convergence | <ul style="list-style-type: none"> • The project collaborated with the Block administration to leverage the MGNREGA funds available at the Gram Panchayat level to cover the labour costs associated with pond construction/ renovation. This also allowed for increased daily wage opportunities for MGNREGA workers of the villages. The workers now get the full quota of 100 days of |

| Parameter | Assessment from the study |
|-----------------------|--|
| | <p>employment under MGNREGA whereas they only used to get 50-60 days before the project.</p> <ul style="list-style-type: none"> The project also took the help of the Gram Panchayats to identify suitable areas for construction of water conservation structures and in desiltation of existing ponds. The Gram Panchayat also helped in creating new embankments to improve water retention capacity of the ponds by providing the necessary labour. |
| Sustainability | <ul style="list-style-type: none"> Some of the Gram Panchayats showed interest in taking up the responsibility of maintaining the water management infrastructures. However, the Gram Panchayats would require the necessary funds to do the maintenance and repairment work. In such case, the Block administration becomes an important stakeholder to provide the financial support to the Gram Panchayats. The project managed to create a good rapport with the Block Administration of Dera Bassi and the Gram Panchayat Institutions of the project villages. It was also shared by the officials of the Block Development Office that they would provide the necessary support to the Gram Panchayats to maintain the water infrastructures created under SRIJAL project. The RO Unit established under the SRIJAL project is already at the helm of the SHG members who are responsible to oversee its daily operations and address to the maintenance and repairment needs. With the ownership of the RO unit fully taken up by the SHG members, the sustainability of the unit depends upon their business acumen and market demands. Although local communities are not using water from RO unit on a daily basis, but as an enterprise the RO unit is making profits without any help from the project. |

3.8. Limitation

Quantitative study was earlier planned to take place in 6 villages however, due to unavailability of respondents in villages Gholu Majra, Sundran, and Samgauli, 7th village for the study was also included for data collection. Thus, Rampur Behal village was added to cover 28 respondents who could not be covered in the other villages.

3.9. Recommendation

Supporting farmers shift to horticultural crops

- Majority of the farmers in the project area practice paddy-wheat dual cropping system which is highly resource intensive. With most of the villages facing acute groundwater shortage and declining soil fertility, it has become essential for the farmers to adopt a more sustainable farming model. Introduction of horticultural crops such as vegetables and fruits and promoting agroforestry can help the farmers shift away from the paddy-wheat system. Farmers would require capacity building support along with input and marketing support to start cultivating the aforementioned crops.

Establishment of a community-owned Bio-resource centre

- The major reasons cited by the farmers behind their reluctance to shift to organic/ natural farming practices is the lack of know-how and non-availability of bio-inputs. The project may look to build capacities of the local farmers on production of bio-inputs and also, can promote a collective bio-resource production centre to not help the local farmers get access to quality bio-inputs but also, establish enterprise around production and marketing of bio-inputs.

Capacitating the community institutions to take up maintenance of water infrastructures

It was observed that there is lack of clear ownership of the water infrastructures such as farm ponds and check dams formed under the project as the community institutions (Farmer Groups/ Gram Sangathans) lacked capacity to carry out maintenance activities for the infrastructures. Although some of the Gram Panchayats have showed their willingness to take up the responsibility of maintaining and repairment of the structures, but the Gram Panchayats have their own challenges in terms of limited fund availability and changing leadership. The project may plan to capacitate the community institutions (SHG/ Farmer group/ Water management group) by providing them with the monetary and capacity building support to take up the necessary work to keep the structures functioning in the long term.

Market linkages for SHG-made products

- Although the project has supported empowering the local women to take up alternate livelihood activities in the form of bag manufacturing, candle making, and vermicompost manufacturing, lack of access to proper markets have limited their profitability. The project may help the SHGs reach out to prospective buyers by providing them with training on branding and marketing and, through helping them get more exposure by attending various trade fairs/ expos/ saras melas, etc.

Empowering local communities to take up silage production


- With the majority of the households in the project area having livestock, the project can also motivate the farmers to take up maize cultivation to produce silage which is a highly nutritious livestock feed. It was also recommended by the Agriculture Development Officer of the SAS Nagar district that there is dearth of silage in the local markets and if, any local group (enterprise) starts producing and marketing silage to the nearby areas (in and around Dera Bassi), it can be a highly lucrative business. The farmers would need the technical guidance and access to the necessary inputs to start cultivating maize at scale and produce and market silage to livestock owners.

Establishment of custom hiring centres for agri-equipments

- Many of the respondents reported that they face difficulties in hiring agri-equipments like DSR machine, Super seeder, etc., on rent as the machine owners prefer to rent out to farmers having large land area. Although the project has contributed towards creating linkage between the machine owners and the small and marginal farmers, supporting the farmers to establish custom hiring centres to purchase the necessary machines leveraging government schemes can help promote farm mechanisation among small and marginal farmers. Farmer groups can be formed to manage the custom hiring centres and take ownership of the machines and establish a rental model among themselves to use the machines.

Designing of project with a long-term vision

- Projects related to promotion of water conservation and management to maintain/ replenish groundwater resources take multiple years to show measurable change in the level of groundwater. Hence, for these kinds of projects, it is suggested that a long-term vision and plan is adopted across its project geographies in a phase-wise manner.



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