



Impact Assessment of IDTV project

Pernod Ricard India Private Limited


June 2024

Price Waterhouse Chartered Accountants LLP



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List of Acronyms

Acronyms	Full Form
AFPRO	Action for Food Production
CSR	Corporate Social Responsibility
FGD	Focus Group Discussion
IDI	In-depth Interview
IDTV	Integrated Development of Tribal Villages
INM	Integrated Nutrient Management
INR	Indian Rupee
IPM	Integrated Pest Management
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 Classes
PoP	Package of Practices
PRI	Panchayati Raj Institution
PRIF	Pernod Ricard India Foundation
PR IPL	Pernod Ricard India Private Limited
PWC ALLP	Price Waterhouse Chartered Accountants LLP
SC	Scheduled Caste
SDG	Sustainable Development Goals
SHG	Self Help Group
SRLM	State Rural Livelihood Mission
ST	Scheduled Tribe
WMC	Water Management Committee



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Executive Summary

Pernod Ricard India Private Limited (PRIPL) has been implementing a range of interventions for communities in & around their geographical presence. PRIPL engaged PW to carry out the impact assessment of its **CSR programme 'Integrated Development of Tribal Villages' with a purpose to evaluate the impact created on the local communities** during the programme period of 2019 to 2022.

The scope of work includes understanding the programme implementation plan and reviewing the Key performance indicators (KPIs) as defined by the Management under the framework for implementing the CSR programme for the outputs, outcomes, and impact of the Programme. 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 programme and provide recommendation on the programme performance for Management's evaluation. Based on the nature of programme, a mixed methodology method was adopted. Interactions were planned for all programmes based on the study methodology after mapping the key stakeholders.

Pernod Ricard India Private Limited onboarded **Action for Food Production (AFPRO)** as the implementing partner to implement the **Integrated Development of Tribal Villages programme in the Dindori block of Nashik district, Maharashtra**. The primary aim was to catalyse positive change within indigenous communities by enhancing their income through sustainable utilisation of natural resources and implementing livelihood enhancement initiatives. The programme was able to reach 4,536 beneficiaries over the 3 years.

A total of **149 programme beneficiaries were surveyed** while conducting the impact assessment study along with **11 qualitative interactions** with key programme stakeholders.

Key Findings:

Water conservation activities

- 58% (n=45) reported that the programme has supported in repairment of spillways in the existing water structures. Earlier, the spillways resulted in leakage of water from ponds and tanks in huge quantity resulting in low retention rate in them. **Repairment of the spillways have stopped water leakage from the pond due to which water remains in the pond all around the year. This has allowed the villagers to use water from pond for irrigation even during the dry months when usually they need water for irrigating their wheat and onion crops.**
- Additionally, the programme, in collaboration with local communities and Gram Panchayat members, identified community-owned farm ponds for desiltation which was reported by 56% (n=45) of the beneficiaries.
- The programme also helped many farmers in constructing poly ponds at their farmlands. 22% (n=45) of the respondents reported that the programme has supported them in constructing poly ponds to improve access to irrigation. It was reported by the respondents during FGD that construction of a poly pond of size 7,200 cubic meters cost around INR 1.5-2 lakhs. **The programme contributed INR 72,000 to each of the beneficiaries for construction of poly pond at their land.**
- Among the various benefits perceived by the local communities due to the programme activities, improved access to water for irrigation leading to **increased cropping intensity was reported as one of the most significant benefits** with 62% (n=45) of the respondents reporting during the survey. Based on the information shared by the 28 respondents who reported increased cropping intensity as one of the benefits from the programme, out of the total cultivable available to them (average of 3.7 acres), they could cultivate 73% of their land in rabi season before the programme intervention while the remaining 27% were left fallow due to unavailability of irrigation.

- Additionally, 47% (n=45) of the respondents reported that the water conservation activities done under programme have helped them in improving their crop yields. Inability to provide irrigation in the later part of the season affected the yield of wheat and onion significantly. **The programme activities however, allowed them to have enough water even during the dry period of March-April due to which they have seen improvement in the yield of wheat (increased by 25% on an average) and onion (increased by 43% on an average).**
- Although the programme has managed to help the local communities in addressing their problems related to access to irrigation during the rabi season, the reach of the programme activities **could have been increased by covering more number of farmers.** The programme only managed to create 18 poly ponds against the target of 71.

Promotion of sustainable agriculture

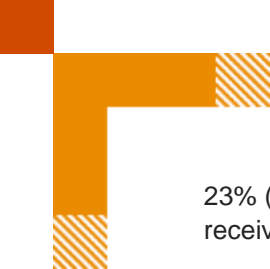
- The majority of the respondents i.e., 60% (n=30) reported of receiving training around good agricultural practices. Upon enquiring about the practices which were promoted under the programme, the respondents **reported that the trainings focused on Integrated Pest Management (IPM) and Integrated Nutrient Management (INM) techniques.** The programme also **established several demo plots and farmer field schools to provide hands-on training to local farmers.** However, as per the information shared by PRIF team, the programme only managed to conduct 20 training sessions against the target of 52.
- In addition to this, **40% of the respondents reported that they received vermicompost units under the programme.** Vermicompost beds along with earthworms were given to the selected farmers to promote the use of organic inputs in their lands.
- All the respondents (n=30) who received support under sustainable agriculture have reported that their **crop yields have improved since before the intervention.** Adoption of nutrient and pest management techniques and use of vermicompost for grape, tomato, and soyabean have **contributed towards reducing crop losses due to lack of vegetative growth and pest attacks.**
- As per the respondents, the following changes has been observed in the yield of crops:

Parameter	Pre intervention	Post intervention	% change
Average yield per acre of grapes per season (n=30)	80 quintals	100 quintals	25%
Average yield per acre of tomato per season (n=30)	100 quintals	150 quintals	50%
Average yield per acre of soyabean per season (n=30)	5 quintals	7 quintals	40%

- Improved yields have in turn helped the farmers **in increasing their household income from farming.** 93% (n=30) reported that their income from farming has increased from before the intervention. Upon enquiring it was understood, that on an average a respondent used to earn INR 8,33,571 per year (n=28) before the intervention. Post the intervention, **the annual income from farming was reported to be INR 11,64,429 which is an increase of 28%.**
- Although 13% (n=30) of the respondents shared that the programme supported them in conducting soil testing, none of them could see any benefit from the testing. It was shared by the respondents that they could only understand the testing report in parts and didn't know how to implement the recommendations in the report.

Skill development and livelihood promotion in agri-allied business

- The programme provided the SHG women with **material support for various livelihood activities such as catering, goat rearing, and cow rearing.** According to beneficiaries, out of 65 respondents, 62% (n=65) respondents reported that they received goats under the programme with an additional



23% (n=65) reporting that they received cows. 15% (n=65) of the respondents shared that they received materials to start catering businesses.


- The SHG supported with the catering materials (utensils) shared that **they generally rented out utensils for events such as marriages or festivals within the village**. It was shared by the respondents that they get 8-10 orders in those months. However, apart from this period, they generally get 1-2 orders per month making the renting business non-viable from an economic perspective. **Overall, the group earns a profit of INR 2,500 per month on an average by renting out utensils** which is not very significant.
- With the objective of providing additional income opportunities to the local women, the **programme provided 4 goats to each individual beneficiary. Sirohi breed of goats which is native to Rajasthan were purchased and distributed to the SHG women**. It was understood through discussions with the respondents that the **goats struggled to adjust to the local environmental conditions and most of them had died within 2 years due to illness**. The respondents also informed that most of the deaths occurred during the monsoon months as they could not adapt to the wet conditions.
- Additionally, respondents also reported that they have received **jersey cows from the programme**. The programme provided one adult cow each to the beneficiaries. As shared by respondents in Nilwandi village, **on an average, a cow produces 10 litres of milk per day which they sell to the local dairy for INR 35 to 40 per litre** depending on the SNF (Solids Not Fat) and fat content. On average, **the respondents earn INR 400 per day from milk sales**, with expenditure costs of INR 150 that includes fodder and labour charges. **Respondents save INR 250 per day which amounts to around INR 7,500 per month**.

Solar-based streetlights

- 100% (n=24) of the respondents reported that they were satisfied with the location or placement of the streetlights. It was shared by the programme implementation team which was then corroborated by the respondents and Sarpanch that the locations for the streetlights were selected in consultation with the Panchayati members and local communities.
- **Additionally, 100% (n=24) of respondents said that the villagers have benefited from the solar streetlights, as they helped in safer movement**. It was explained by the respondents **that many times they have to go to their agricultural fields at night to provide irrigation** as electricity is available only during that time. The installation of the streetlights has also helped the farmers in this aspect as they believe leopards generally hides in darker areas.

Key Recommendations:

- Promotion of livestock breeds that are suited to the region becomes crucial for ensuring sustainability of the intervention.
- Many players from government and private sector have been working in the Nashik region to further the cause of sustainable agriculture by empowering the local farmers with agri-input, training, and marketing support. The programme can identify such stakeholders to develop synergistic collaborations based on common interests. This can help the programme achieve its goals in a more efficient manner.
- Providing the Farmer Groups and Water Management Groups with the necessary financial and capacity-building support can ensure the long-term functionality of the structures/ equipments created under the programme.

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- Providing training support livestock management practices and capacitating farmers to adopt techniques such as artificial insemination and silage production can enhance productivity of the livestock. Additionally, creating market linkages with established dairy players can further help the local communities get remunerative prices for their produce.

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

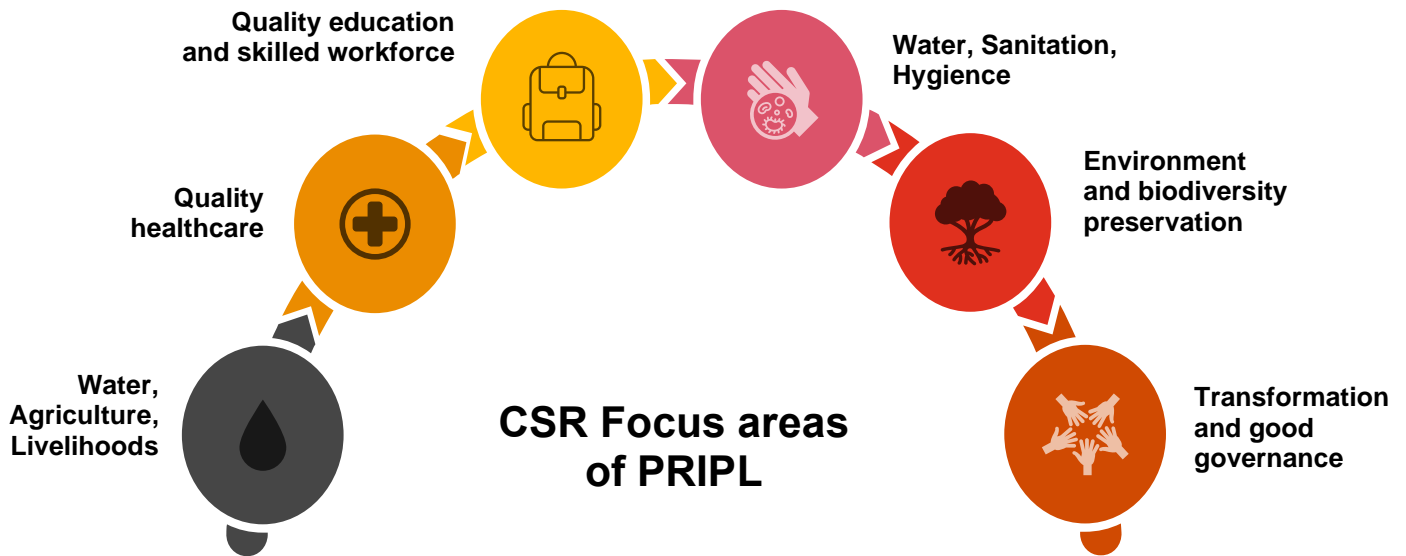
1.1. About PRIPL

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.



CSR Reach	 22 States	 1600 Villages	 3.6 million coverage
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1.2. About the programme

Pernod Ricard has its state-of-the-art manufacturing plant in Dindori block of Nashik district which makes this an important region for the company. It has been working with the local communities of the nearby villages to support them to improve their livelihood conditions by creating access to water conservation infrastructures, building their capacities around sustainable agriculture and creating alternate income sources.

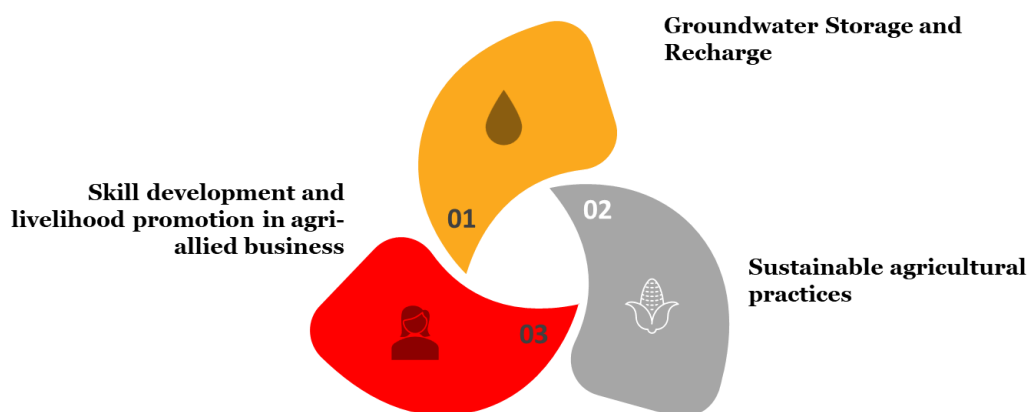
Pernod Ricard India Private Limited, in collaboration with **Action for Food Production (AFPRO)** as its implementing partner, had launched the **Integrated Development of Tribal Villages programme in the Dindori block of Nashik district, Maharashtra**. The primary aim was to catalyse positive change within indigenous communities by enhancing their income through sustainable utilisation of natural resources and implementing livelihood enhancement initiatives.

Figure 1: Overview of the programme



As understood from the desk review of the programme documents shared by Pernod Ricard India Private Limited, the Integrated Development of Tribal Villages programme focused on **creating awareness around water conservation among the local communities and promoting groundwater recharge by establishing/repairing traditional water harvesting structures**. The programme 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 programme also worked on **promoting solar-based streetlights** in programme villages.

Figure 2: Key focus areas under the programme



1.3. About the implementing agency

Action for Food Production (AFPRO) has been committed to uplifting impoverished and marginalised rural communities since 1966. It has been working across India working primarily with socially and economically deprived communities in rural areas. AFPRO works in Watershed Management, Climate Resilient Sustainable Agriculture, and Livelihood Diversification to ensure effective natural resource management. Organisation's main objective is to empower rural communities by strengthening their resource base and capabilities, through improved knowledge and skills both in technical and enhancing socio-economic status¹.

¹ Website of AFPRO - <https://afpro.org/about-us/>



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 programmes with a purpose to evaluate the impact created on the community during the programme 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 programme for the outputs, outcomes, and impact of the Programme. 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 programme documents, mapping of key programme 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 programme 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 programme 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 programme 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 Programme 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 programme? 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 programme team members. Discussions were also held during the meeting to align on the scope of work including the finalization of programmes 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 **programmes under assessment**. In this regard, following documents were received from the PRIPL programme team for the desk review:

- MoU between PRIPL and AFPRO for the programme
- Programme annual report programme
- Beneficiary data of programme

Post receiving the documents, the team initiated the desk review of the programmes. 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 programme geographies. This helped the team with the following:

- Develop understanding of the programme 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 programmes was finalised**. In-person individual interviews with the beneficiary households were conducted along with Focus Group Discussions (FGD), In-Depth Interviews (IDI), and Key Informant Interviews (KII) with key stakeholders of the programme.

Basis the data shared by Pernod Ricard, in total 4,536 beneficiaries were covered under the programme. However, AFPRO had shared details of 3,721 beneficiaries of the Integrated Development of Tribal Villages programme which was considered to be the universe for the impact assessment study and accordingly sample was estimated.

A **sample of 254** 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 programmes as obtained from each programme MoU)
- M = margin of error (5%)
- p = population proportion (considered as 50%,0.5)
- It was ensured that all the 4 programme themes were covered under the survey. However, due to challenges pertaining to mobilising of beneficiaries for interviews (which is discussed in detail in 'Limitations'), only 149 respondents could be covered as part of the quantitative survey.

Sl. No.	Programme Villages	Total Sample Size
1	Awankhed	9
2	Dahegaon	15
3	Jambutake	23
4	Kaduwa Mhalungi	20
5	Madkijamb	12
6	Nilwandi	22
7	Pade	14
8	Umrале Khurd	13
9	Valkhed	13
10	Vanarwadi	5
11	Waghaludo	3
Total		149

- 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
AFPRO's Implementation Team	IDI	1
Government official	KII	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 programme 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 programme 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 programme as per each of the activities and interventions.

3.1. Profile of the respondents

Among 149 respondents, 48% were male and 52% were female. The average age of respondents was 43 years. 54% (n=149) fell in the age bracket 40-49, followed by 25% in the age bracket 30-39.

Examining the education levels, 32% (n=149) respondents had completed 10th standard followed by 12% who have completed 12th standard. 18% of the respondents reported that they are literate (knows to read and write in Marathi language) but have not received any formal education. 9% respondents shared that they don't know how to read or write (illiterate).

48% (n=149) of the respondents identified themselves as the chief breadwinners in their households. Among those who did not identify as a chief breadwinner, in that case, the husband was reported as the chief breadwinner.

The graph below illustrates the demographic of the surveyed population.

Figure 3: Gender distribution of the respondents (n=149)



Figure 4: Age distribution of the respondents (n=149)

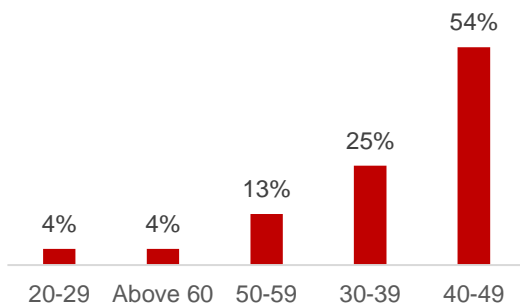
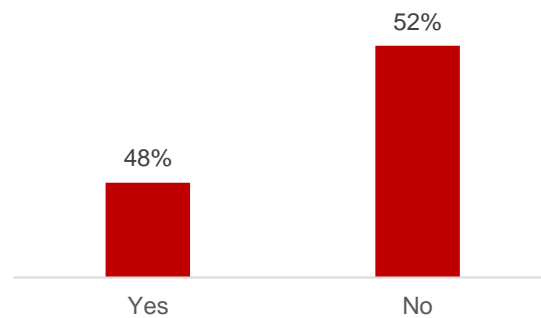


Figure 5: Chief bread winner of the respondents (n=149)



Farming was reported as the main source of livelihood by the respondents with the **average landholding capacity among the respondents reported to be around 4 acres**, showcasing the programme's focus to work with the small and marginal farmers. It was understood from the discussions with local communities that **grape was the main crop in the region**. Some of the kharif and rabi crops that are grown by the local communities included tomato, soyabean, wheat, and onion.

As shown in the below graphs, **52% (n=149) reported that they had an alternate income source in addition to farming**. Among the alternate income sources, most of the local communities i.e., 85% (n=78) were engaged in animal husbandry for bringing additional income to their households. **Goat and cow rearing were the most common activities among animal husbandry**.

Figure 6: Respondents with alternative source of income (n=149)

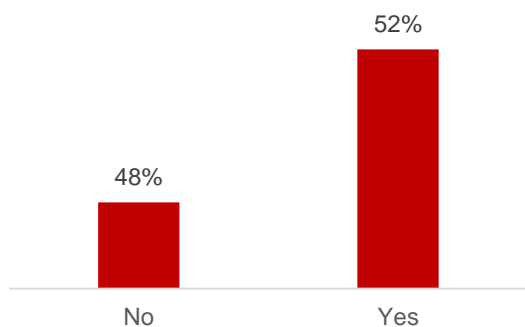
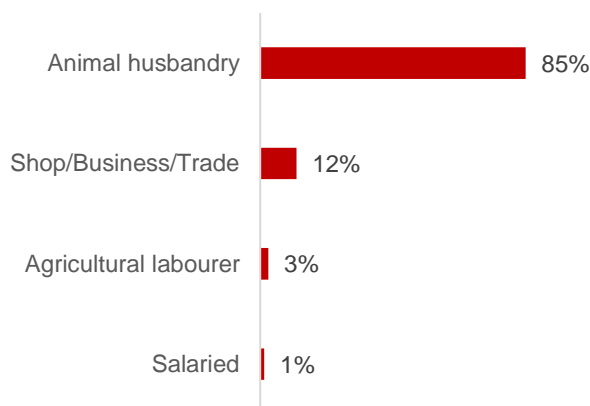


Figure 7: Alternative source of income (n=78)



3.2. Groundwater Storage and Recharge

3.2.1. Need for the intervention

Discussions with the local communities revealed that they were encountering difficulties accessing water for irrigation because of declining groundwater levels. Local farmers mentioned that each year, groundwater depths have been increasing, prompting them to repeatedly deepen their borewells to maintain adequate pumping depths.

Additionally, lack of availability of water conservation structures in their localities meant the farmers were dependent on groundwater resources (mainly open wells) and canals for irrigation. However, these resources used to dry up during the Rabi season (post February) creating acute water shortages among the local communities. Lack of water for irrigation also used to affect the yield of crops like wheat and onion. Depletion of water resources also used to put additional pressure on local communities as it required longer time to irrigate their lands using borewells and also, added to their cost of irrigation.

3.2.2. About the intervention

As understood from the programme documents, the programme identified these challenges and designed an intervention focusing on improving groundwater resources as well as enhancing the storage capacities of surface water resources. The programme conducted **extensive communication drives** for raising awareness about the need of water conservation and about promotion of water saving strategies practices and technologies. The programme also contributed towards **construction of poly ponds, renovation of existing percolation tanks, spillway, and canals.**

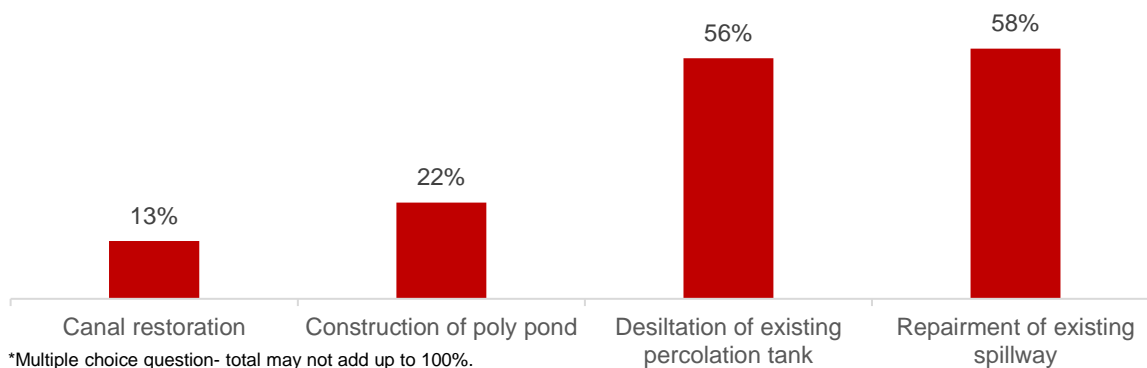
Below is a snapshot of the different activities done under the programme..

Water Conservation	Activities
Creation of surface water storage capacity	Construction of poly ponds at farmers' land
Improve groundwater recharge capacity	Desiltation of percolation tanks
Promotion of water use efficiency	Renovation of canals and spillway

3.2.3. Impact of the intervention

Of the 149 participants surveyed in the study, 45 respondents, constituting 30%, indicated their awareness of the water conservation-related programme activities implemented by the programme. When asked to these beneficiaries about their familiarity with various water-related initiatives, the survey recorded the following responses, as depicted in the graph provided.

Figure 8: Support received by respondents (n=45)



58% (n=45) reported that the programme has supported in repairment of spillways in the existing water structures. Earlier, the spillways resulted in leakage of water from ponds and tanks in huge quantity resulting in low retention rate in them. Residents of Madkijamb village during interactions reported that before the programme intervention, water in the community pond lasted only till February. **Post that, till arrival of monsoon rains in June, the villagers faced acute water shortage for irrigating their lands. Repairment of the spillways have stopped water leakage from the pond** due to which water remains in the pond all around the year. **This has allowed the villagers to use water from pond for irrigation even during the dry months** when usually they need water for irrigating their wheat and onion crops.

It was also further reported that due to the intervention, **more than 40 households can now transport water from the community pond to their fields using pump and pipeline and nearly, 80-100 acres of land can now be irrigated through pond water during the rabi season.**

Additionally, the programme, in collaboration with local communities and Gram Panchayat members, identified community-owned farm ponds that had experienced a reduction in their storage capacity due to silt deposition. 56% of the respondents (n=45) reported that desiltation of existing tank (percolation tank) have been done under the programme. One of the most significant activities done under the programme was desiltation of the community tank in Jambutake village. **The village tank which caters to more than 100 households had not been renovated ever since its construction.** The programme contributed INR 21 lakhs with the Gram Panchayat contributing another INR 2.2 lakhs for **desiltation of the tank which was done in 2 phases over 2 years.**

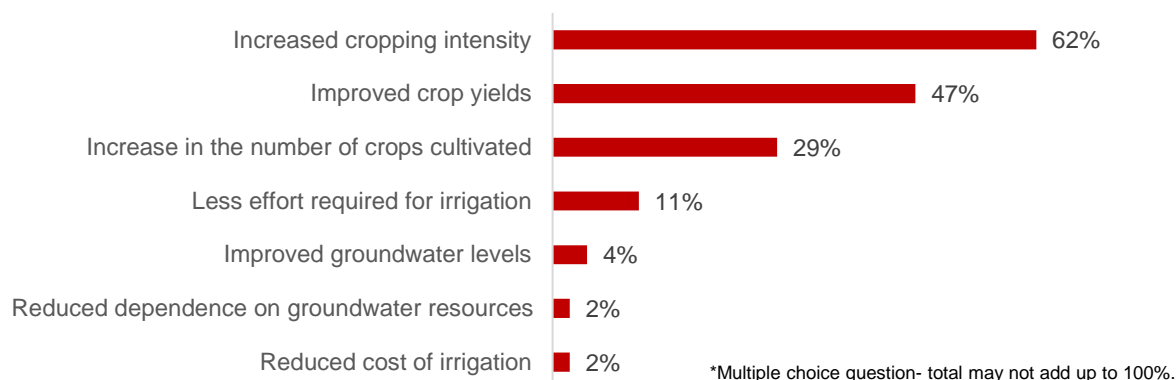
The programme also helped many farmers in constructing poly ponds at their farmlands. 22% (n=45) of the respondents reported that the programme has supported them in constructing poly ponds. It was reported by the respondents during FGD that **construction of a poly pond of size 7,200 cubic meters cost around INR 1.5-2 lakhs. The programme contributed INR 72,000 to each of the beneficiaries for construction of poly pond at their land.**

13% (n=45) of the respondents informed that the programme has worked on restoration of canal in their village. It was understood through discussion with the AFPRO which was further corroborated by the local communities that this intervention was done in Valkhed village of Dindori block. The farmers of Valkhed village have been receiving water from the nearby Waghad dam through canals established by the government. However, lack of maintenance of the canals had led to many leakages which affected the water pressure within the canals. Due to this, many farmlands situated in the downstream stopped receiving water from the canals. **The Water Management Committee of Valkhed shared that deteriorating canal conditions prompted many farmers to switch to borewells and open wells for irrigation increasing their dependence on groundwater resources.** The restoration done under the programme was done on a 16 km stretch of the canal. **Committee**

members reported that the restoration efforts successfully reduced water leaks and facilitated water distribution to farmlands situated farther from the canal.

These activities undertaken by the programme has helped the local communities in several ways. The below graph shows how the respondents have benefitted from the support provided under the programme:

Figure 9: Benefits reported by respondents due to the programme activities (n=45)



Among the various benefits perceived by the local communities due to the programme activities, **increased cropping intensity was reported as one of the most significant benefits** with 62% (n=45) of the respondents reporting during the survey. It was understood through the FGDs with local farmers that before the intervention, they could not cultivate all their lands during the rabi season due to shortage of water for irrigation. They informed that water in their community/ individual farm ponds only lasted till February because of which they could only provide irrigation to some of their land area. Based on the information shared by the 28 respondents who reported increased cropping intensity as one of the benefits from the programme, out of the total cultivable available to them (average of 3.7 acres), they could cultivate 73% of their land in rabi season before the programme intervention while the remaining 27% were left fallow due to unavailability of irrigation.

However, due to the programme intervention, the same respondents reported that they could now cultivate 100% of their cultivable land during the rabi season improving their cropping intensity.

Parameter	Pre intervention	Post intervention	% change
Average land area during rabi season (n=28)	~2.7 acres	~3.7 acres	37

Additionally, 47% (n=45) of the respondents reported that the water conservation activities done under programme have helped them in improving their crop yields. Inability to provide irrigation in the later part of the season affected the yield of wheat and onion significantly. **The programme activities however, allowed them to have enough water even during the dry period of March-April due to which they have seen improvement in the yield of wheat and onion.** The change in yield of wheat and onion as reported by the farmers due to their ability to provide critical irrigation is depicted below:

Figure 10: Average yield per acre for wheat per season (in quintal) [n=21]

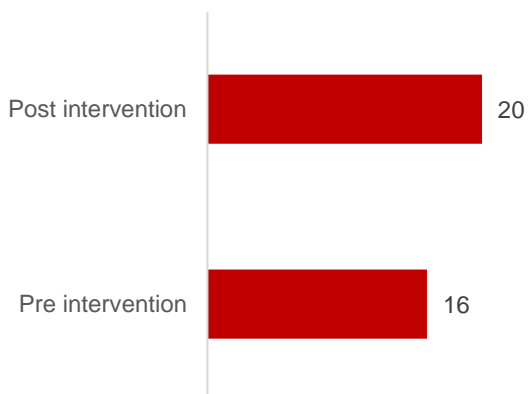
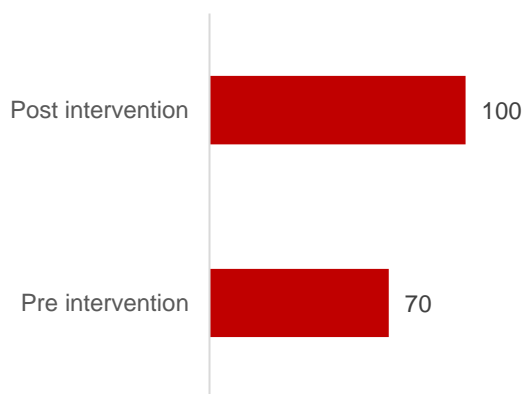


Figure 11: Average yield per acre for onion per season (in quintal) [n=21]



29% (n=45) of the respondents also reported that they could now grow more number of crops due to better access to irrigation facilities. Among the respondents who informed of this benefit, the majority of the respondents i.e., 54% (n=13) used to grow 2 crops (Grape and Tomato) before the intervention. The remaining 46% generally grew paddy during kharif but this was restricted to farmers having low lying agricultural lands. Post the intervention, all these 13 respondents shared that they have also started growing vegetables due to availability of water. Since, vegetables require ample amount of water, the farmers earlier refrained from cultivating such crops as they tried to save as much water as possible for the rabi season. But with availability of water not becoming an issue during rabi season, these few farmers have started growing vegetables both in kharif and rabi seasons. Earlier, 100% (n=13) used to grow 2 crops during rabi season (onion and wheat) but now, all of them reported that they grow vegetables as well.

As reported by 11% (n=45) of the respondents, the water-related activities have helped them to reduce the effort required to irrigate their lands. Availability of poly ponds in their vicinity, alternate option to lift water from percolation tanks, and canal restoration 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 (without power cuts) [n=5]	~3 hours	~2 hours	~33

Farmers reported providing approximately 9-10 irrigations to one acre of land per year. Therefore, the support provided by **the programme has enabled them to save a significant amount of time**, which they can now allocate to other household activities.

In addition to reducing the time needed for irrigation, **the programme activities have also decreased the cost associated with irrigation**. According to respondents, **the primary irrigation method in the area involves using electric pumps to draw water from percolation tanks, farm ponds, or open wells**. Previously, respondents noted that **due to frequent power cuts, it took over more than 5 hours to irrigate one acre of land**, often requiring them to remain in their fields overnight as electricity was only available during those hours. This imposed significant strain on farmers' health and on their electric pumps, which had to operate for extended periods. However, with improved access to water sources, farmers can now irrigate their fields more efficiently, mitigating the inconvenience caused by power cuts. **Additionally, the lifespan of their electric pumps has increased as they now operate for fewer hours.**

Figure 12: A poly pond established under the programme in Jambutake village



Although the programme has managed to help the local communities in addressing their problems related to access to irrigation during the rabi season, the reach of the programme activities **could have been increased by covering more number of farmers**. The programme only managed to create 18 poly ponds against the target of 71. Many of the farmers reported during the FGD that they were hoping to get programme support to establish poly ponds at their farmlands but that didn't materialise. The team of AFPRO cited the challenges inflicted by the Covid pandemic as the major reason behind inability of the programme to reach the intended coverage. Also, in addition to restoration of the main canal in Valkhed, the Water Management Committee reported that **work should have been done in the major distributaries of the canal as well to reduce further leakage of water**. The farmers of Umrle Khurd and Jambutake also mentioned that **although the programme worked on desiltation of the percolation tank, construction of cement nala bunds (embankments) would have allowed to store runoff water to increase storage capacity of the tanks**.

Snapshot of the impact created by the water conservation activities

The below table is based on the findings from the interactions with the local communities and other key stakeholders. The outcomes from the programme activities are solely based on the perceptions of the respondents.

Activity	Outcome from the programme activities (as reported)
Desiltation of existing percolation tanks	<ul style="list-style-type: none"> • Reduced dependence on groundwater resources • Access to increased storage of rain water • Assured access to water for irrigation of rabi crops and viticulture
Repairment of existing spillway	
Renovation of canal	<ul style="list-style-type: none"> • Reduced dependence on groundwater resources • Reduced time required for irrigation
Construction of poly ponds	<ul style="list-style-type: none"> • Reduced dependence on groundwater resources • Improved crop yield for rabi crops • Assured access to water for irrigation of rabi crops and viticulture • Increased land area under irrigation during rabi season

3.3. Promotion of sustainable agriculture practices

3.3.1. Need for the intervention

As understood from our discussions with the local communities, most of the farmers of the Dindori block have been practising chemical intensive farming methods with grape, tomato, onion, wheat being the major crops. Crops such as grape and tomato are highly susceptible to pest attacks creating tremendous challenges for the farmers. Changing climatic patterns have been further compounding to crop risks which has been leading to higher cost of cultivation for farmers.

With most of the farmers in the region being small and marginal farmers having less than 5 acres of land (as reported by respondents in the survey), 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.

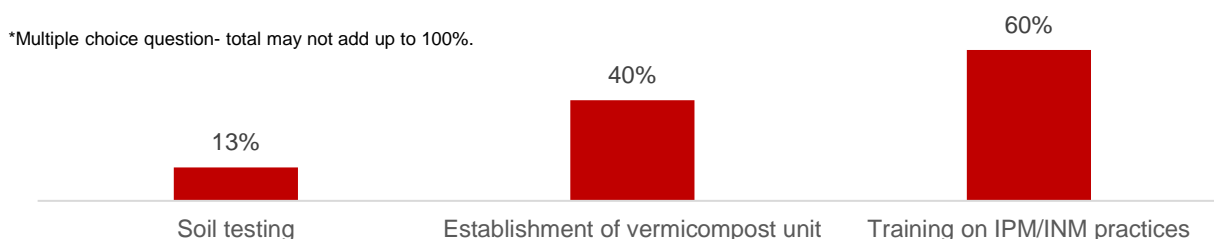
3.3.2. About the intervention

As mentioned in the programme documents, the programme 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 reducing dependence on chemical inputs by promoting integrated pest management, integrated nutrient management techniques, vermicomposting, and soil testing. The programme established demo-plots and conducted workshops to capacitate the farmers to adopt sustainable practices.

3.3.3. Impact of the intervention

Out of the 149 respondents covered during the study, 30 respondents i.e., 20% 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=30)



The majority of the respondents i.e., 60% (n=30) reported of receiving training around good agricultural practices. Upon enquiring about the practices which were promoted under the programme, the respondents **reported that the trainings focused on Integrated Pest Management (IPM) and Integrated Nutrient Management (INM) techniques.** The programme also **established several demo plots and farmer field schools to provide hands-on training to local farmers.** These demo plots and farmer field schools were established at a selected farmer's field. It was observed that the identified farmers dedicated around 0.5 acres of land for establishment of demo plot and farmer field school. The programme then trained the landowning farmer on various sustainable practices related to crops such as tomato, grape, and soyabean. These trained farmers then acted as trainers for other farmers in the village. The programme also organised workshops with the help of Krishi Vigyan Kendra (KVK) scientists to create awareness among farmers around sustainable agricultural practices. However, as per the information shared by PRIF team, the programme only managed to conduct 20 training sessions against the target of 52.

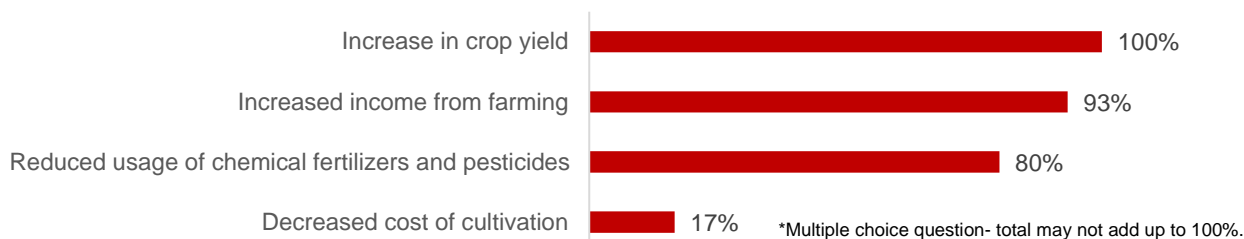
In addition to this, 40% of the respondents reported that they **received vermicompost units under the programme.** Vermicompost beds along with earthworms were given to the selected farmers to promote the use of organic inputs in their lands.

Another 13% of the respondents shared that the programme **helped them in conducting soil testing**. The programme through the help of KVK provided the financial support to conduct soil testing of their lands to learn the state of macro and micronutrients in their soil.

It is to be highlighted that although the programme planned to establish one automatic weather station in the programme area, but as reported in the programme documents, this was not achieved.

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

Figure 14: Benefits reported by respondents due to the programme activities (n=30)



All the respondents (n=30) who received support under sustainable agriculture have reported that their crop yields have improved since before the intervention. Adoption of nutrient and pest management techniques and use of vermicompost for grape, tomato, and soyabean have contributed towards reducing crop losses due to lack of vegetative growth and pest attacks.

As per the respondents, the following changes has been observed in the yield of crops:

Parameter	Pre intervention	Post intervention	% change
Average yield per acre of grapes per season (n=30)	80 quintals	100 quintals	25%
Average yield per acre of tomato per season (n=30)	100 quintals	150 quintals	50%
Average yield per acre of soyabean per season (n=30)	5 quintals	7 quintals	40%

As can be seen from the table, increase in **yield is the most significant in case of tomato**. Upon enquiring, the farmers informed that getting access to quality seeds of hybrid varieties have helped the farmers enhance their production. It is to be noted that **improvement in crop yields is not only because of this programme intervention. Farmers shared that they have also been receiving capacity building and input support (seeds, fertilizers, and pesticides) from Department of Horticulture as well as various key ecosystem players such as Sahyadri Farms** (A Farmer Producer Company involved in marketing of agri-commodities).

Improved yields have in turn helped the farmers in increasing their household income from farming. 93% (n=30) reported that their income from farming has increased from before the intervention. Upon enquiring it was understood, that on an average a respondent used to earn INR 8,33,571 per year (n=28) before the intervention. Post the intervention, **the annual income from farming was reported to be INR 11,64,429 which is an increase of 28%**.

In addition, **80% (n=30) shared that the programme has helped them in reducing usage of chemical fertilizers and pesticides**. The trainings provided under the programme on Integrated Pest Management (IPM) and Integrated Nutrient Management (INM) techniques **have helped them reduce their dependence on chemical inputs**. The programme promoted the use of vermicompost and organic materials as substitute to chemical fertilizers. Also, adoption of IPM practices such as pheromone traps, yellow sticky traps, light traps, solar insect traps, etc. helped in reducing reliance on chemical pesticides. As informed by respondents, **the average cost of fertilizers and pesticides have reduced by 15% for tomato and soyabean**. However, the reduced costs related to fertilizers and pesticides doesn't necessarily lead to decreased overall cost of cultivation as the farmers highlighted their plight with increased occurrence of weeds post shifting to natural pesticides. Due to high weed occurrence, the farmers have to spend extra on hiring manual labour for weeding which ultimately balances out the gains made from reduced usage of fertilizers and pesticides. Thus, **although**

80% of the respondents reported of reduced usage of fertilizers and pesticides, only 17% (n=30) mentioned that their cost of cultivation has gone down post the programme intervention.

Although 13% (n=30) of the respondents shared that the programme supported them in **conducting soil testing**, none of them could see any benefit from the testing. It was shared by the respondents that they could only understand the testing report in parts and didn't know how to implement the recommendations in the report.

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 other key stakeholders. The outcomes from the programme activities are solely based on the perceptions of the respondents.

Activity	Outcome from the programme activities (as reported)
Training on Integrated Pest Management (IPM) and Integrated Nutrient Management (INM) techniques	<ul style="list-style-type: none"> • Improved know-how among farmers around sustainable agricultural practices • Reduced dependence on chemical inputs • Improved income from farming
Input-support (vermicompost)	

Figure 15: Pheromone traps introduced by the programme in Madkijamb village



3.4. Skill development and livelihood promotion in agri-allied business

3.4.1. Need for the intervention

As shared by the team of AFPRO, although Self Help Groups (SHGs) were formed by the State Rural Livelihood Mission (SRLM) to empower women members through finance inclusion and livelihood promotion, many of the SHGs were not active in the Dindori block. The local communities shared that women member of the households worked as daily wage laborers on the farms of large farmers, leaving them with little time to take care of their children.

3.4.2. About the intervention

In Dindori block, to facilitate the SHG women with livelihood opportunities, the Integrated Development of Tribal Villages programme provided SHG women with the necessary support to initiate various livelihood activities such as catering, goat rearing, and cow ownership. The programme aimed to leverage the existing SHG structures to promote livelihood activities among women members to empower them financially as well as socially. Goat rearing, dairy farming, and catering businesses promoted under the programme enabled the SHG women to earn additional income for their households and allowed them more time with their family members as well as step out of the four walls of the household, taking ownership and decision making in community development.

3.4.3. Impact of the intervention

As per the responses received, 44% (n=149) of the respondents shared that they are part of SHGs, and 100% (n=65) responded informed that they have been part of the SHGs for more than three years. The respondents reported during the FGDs that although they have been part of the SHGs for more than 5 years, the SHGs were not active for majority of the period. The programme identified the SHG structure as a ready-made platform to mobilise and support the local women. The programme provided the SHG women with **material support for various livelihood activities such as catering, goat rearing, and cow rearing.**

Figure 16: Respondents being the part of community institution

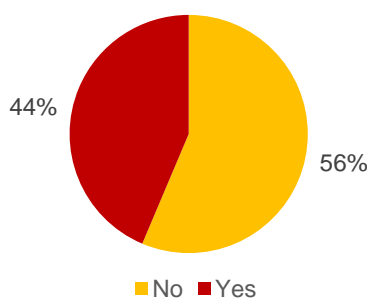
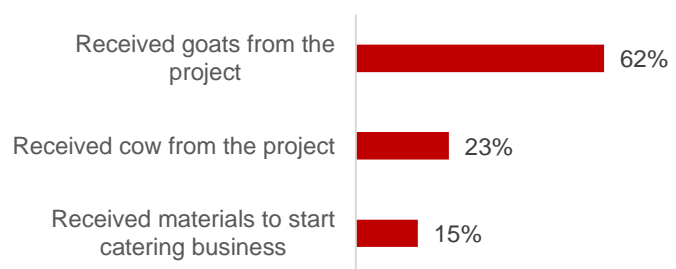


Figure 17: Support received by the community-based organisation (n=65)



According to beneficiaries, out of 65 respondents, 62% (n=65) respondents reported that they received goats under the programme with an additional 23% (n=65) reporting that they received cows. 15% (n=65) of the respondents shared that they received materials to start catering businesses.

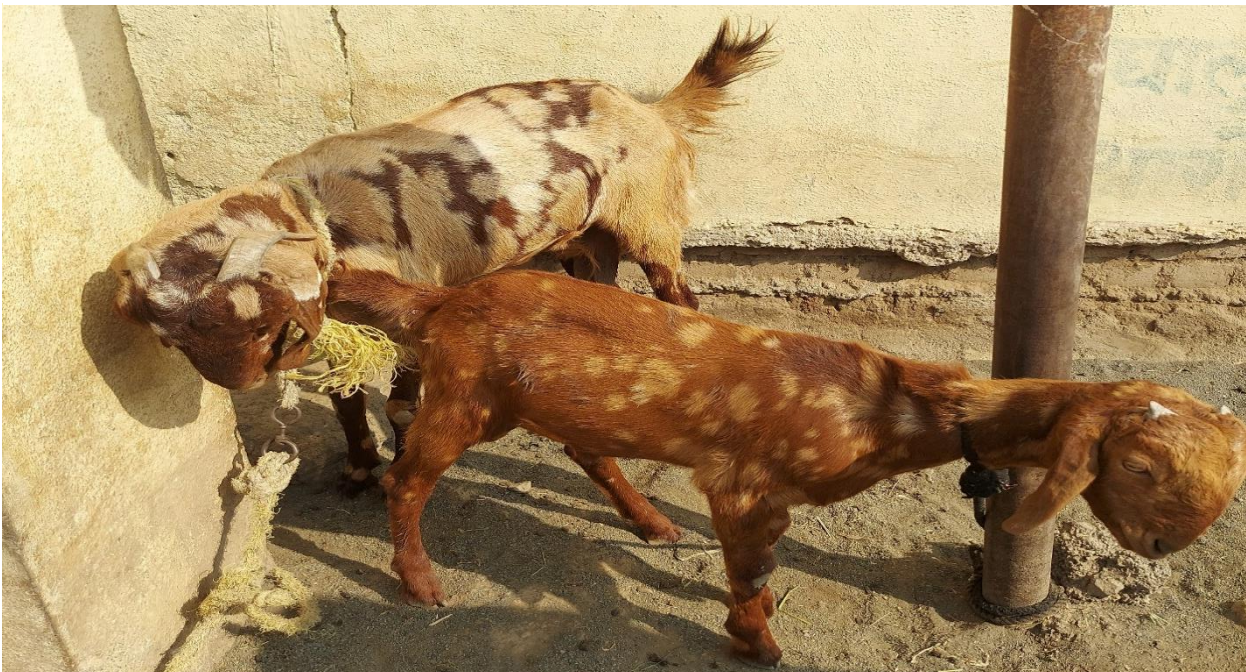
In Umrle Khurd, under the programme, the respondents **received catering materials which they rented out for events such as marriages or festivals within the village.** The rental cost for big utensils (*kadhai, patila, handi, etc.*) is INR 50 per day. However, not all utensils are rented out on the same day as the villagers take utensils as per their needs. **Demand is at the highest during the local marriage season lasting between April to June.** It was shared by the respondents that they get 8-10 orders in those months. However, apart from this period, they generally get 1-2 orders per month making the renting business non-viable from an economic perspective. **Overall, the group earns a profit of INR 2,500 per month on an average by renting out utensils** which is not very significant and thus, the SHG women continues to work on agricultural farms for 10-15 days a month to bring the extra income to their household.

With the objective of providing additional income opportunities to the local women, the **programme provided 4 goats to each individual beneficiary. Sirohi breed of goats which is native to Rajasthan were purchased and distributed to the SHG women.** The programme team explained that Sirohi breed goats were selected based on consultation with the Livestock Department. **The cost of one goat kid (1 year old) was INR 10,000 wherein the programme provided INR 6,000 with the beneficiary contributing the remaining INR 4,000 per goat.**

Through the discussions with the respondents in villages Pade, Kaduwa Mhalungi, Dahegaon, it was understood that the **goats struggled to adjust to the local environmental conditions and most of them had died within 2 years due to illness.** The respondents informed that most of the deaths occurred during the monsoon months as they could not adapt to the wet conditions. Also, difficulty to obtain dry fodder during the monsoon season contributed to their high mortality rates as Sirohi breed generally prefers dry fodder. They mentioned that visible growth was observed in the first six months, with a weight of approximately 5 kg. But despite their efforts majority of the goats succumbed to illness. However, there were still **some beneficiaries who were able to benefit** from this intervention. One of the beneficiaries in Kaduwa Mhalungi village shared that she sold 4 goats in the last year which **fetches her around INR 20,000 per goat.** She still has 3 more goats left with two being male kids. She expects that within 9 months the approximate value of these goats will be around INR 10,000.

Additionally, respondents also reported that they have received **jersey cows from the programme.** The programme provided one adult cow each to the beneficiaries. As shared by respondents in Nilwandi village, **on an average, a cow produces 10 litres of milk per day which they sell to the local dairy for INR 35 to 40 per litre** depending on the SNF (Solids Not Fat) and fat content. On average, **the respondents earn INR 400 per day from milk sales,** with expenditure costs of INR 150 that includes fodder and labour charges. **Respondents save INR 250 per day which amounts to around INR 7,500 per month.** The respondents shared that they are quite happy with the cows and are contemplating to perform artificial insemination to increase milk production. They informed that if a female calf is born, it is expected to produce 20 litres of milk. Artificial insemination will cost them INR 1,400 but is expected to enhance their income in the long term.

Figure 18: Sirohi goats provided to SHG members in Kaduwa Mhalungi village



3.5. Solar based streetlights

3.5.1. Need for the intervention

As shared by the respondents in Madkijam and Kaduwa Mhalungi villages, there were very few streetlights in their village. It was difficult to move from one place to another at night. Also, the region having significant wildlife population (including leopards), it was a threat to walk around the village after sunset. With many farmers having to travel to Nashik and Pimpalgaon to sell their produce, they often get late and return during the night time and the lack of lighted streets created significant challenges for the local residents.

3.5.2. About the intervention

The programme identified this challenge and contributed towards addressing it by installing solar streetlights in the programme villages. With power crisis during the summer months being a common thing, the programme chose to install solar streetlights to evade this problem.

3.5.3. Impact of the intervention

100% (n=24) of the respondents reported that they were satisfied with the location or placement of the streetlights. It was shared by the programme implementation team which was then corroborated by the respondents and Sarpanch that the locations for the streetlights were selected in consultation with the Panchayati members and local communities.

Additionally, 100% (n=24) of respondents said that the villagers have benefited from the solar streetlights, as they helped in safer movement. Respondents from Pade, Dahegaon, and Jambutake villages informed that leopard attacks are quite common in their area. The streetlights have been very helpful in providing safer movement to the local residents. It was explained by the respondents **that many times they have to go to their agricultural fields at night to provide irrigation** as electricity is available only during that time. The installation of the streetlights has also helped the farmers in this aspect as they believe leopards generally hides in darker areas. However, the respondents mentioned that **more streetlights should have been installed** as there are many more areas in the village which don't have lighting.

Figure 19: Solar streetlights installed in Madkijamb village



3.6. Stories of change

Change story: 1 – Finding alternate income sources in dairy farming

Sandhya Hire (name changed) has four members in the family who rely entirely on farming for their living. They have 2 acres of land, and for their survival, she had to work as daily wage labourer which allowed her to earn an extra income of INR 3,000-4,500 per month by working 8 hours for 10-15 days. Sandhya received a cow under the programme for which she paid 50% of the cost of the cow amounting to INR 34,000 and the remaining cost was paid by the programme. This support helped her family create an alternate source of income as it produced 10 litres of milk per day on an average. They sold the milk to the nearby dairy at Rs 35-40 per litre. This allowed her family to earn an additional income of INR 10,500-

12,000 on a monthly basis. Sandhya's family can easily save around INR 200-250 per day post an expenditure of INR 150 per month on obtaining fodder.

Sandhya now, has stopped working as a daily wage labour as she finds it more fruitful to invest her time in taking care of the cow. This also has allowed her to spend more time with her children. Seeing the profits from dairy farming, Sandhya plans to buy another cow soon, believing it will help her family earn more income.

Change story: 2 – Improved water access leading to better yields

Anil Shinde (name changed) lives with his family of four in Jambutake village. Farming is the sole source of livelihood for his family. Anil has 3 acres of cultivable land in which he grows grapes and tomato in kharif season and wheat and onion in the rabi season. Before the programme intervention, he was dependent on the community pond for irrigation. He uses electricity-based pump to transport water from the pond to his fields. He shared that he faced severe water crisis during the period between March-May when the pond used to dry up, which affected the yield of onion and wheat crops. As the water facilities were limited, the yield for wheat was 15 quintals per acre, and for onions, they could produce 70-75 quintals per acre before the intervention. The desiltation of the community farm pond done under the programme proved to be quite beneficial for Anil as this intervention increased the storage capacity of the farm pond and ensured that water is available throughout the year. Now, Anil had access to water throughout the year which helped him provide the necessary number of irrigations to wheat and onion crops. This in turn, helped him to increase yield of onion to 110 quintals per acre and 20 quintals per acre for wheat. This improvement in yield has helped him earn extra income to the tune of INR 1 lakh per year.

Change story: 3 – On a path towards financial stability

Sumit, 45 years old, resides in Dahegaon with his family of six. Faced with challenges like depleting groundwater table and rising cost of cultivation, he was struggling to make enough income from his 3 acres of land to sustain his family.

With 50% support from the programme, Sumit established a poly pond at his farmland. Earlier, he used to depend on openwell and canal for irrigating his 3 acres. He mentioned that due to shortage of water post-February, he could only cultivate 1.5 acres of his land during the rabi season. But with the establishment of the poly which cost him INR 70,000, he can now provide irrigation to all the 3 acres throughout the year. He informed that he now grows wheat over 1.5 acres and onion over the remaining 1.5 acres during the rabi season. Better access to water for irrigation has helped him increase his income from agriculture by around INR 1 lakh per year. The increased income has allowed him to foreclose his outstanding loan and build up enough savings to purchase a new tractor.

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	<ul style="list-style-type: none"> The programme targeted vulnerable segments of society, encompassing tribal households as well as small and marginal farming households. Depleting water resources and rising cost of inputs have significantly impacted these local communities. Recognizing their plight, the programme provided them with a range of support to enhance their livelihood status. Among the respondents, 83% had not pursued education beyond matriculation (class X), with 9% being illiterate. Through the programme's efforts, these respondents have gained greater exposure and awareness concerning resource conservation and livelihood enhancement. Furthermore, the programme ensured equitable inclusion of both male and female beneficiaries, devoid of any gender-based disparities.
Relevance	<ul style="list-style-type: none"> Local communities faced severe challenges in accessing water for irrigation due to declining groundwater levels. Moreover, the absence of water conservation structures in their vicinity left farmers reliant on groundwater sources, predominantly open wells and canals, for irrigation. However, these resources often dried up during the rabi season (after February), leading to severe water shortages within the local communities. The scarcity of irrigation water also adversely affected crop yields, particularly for crops like wheat and onions. The depletion of water resources placed additional strain on the local populace, prolonging the time required for land irrigation through borewells and increasing the overall cost of irrigation. The majority of farmers in the Dindori block have traditionally employed chemical-intensive farming techniques, focusing on crops such as grapes, tomatoes, onions, and wheat. However, these crops, particularly grapes and tomatoes, are highly vulnerable to pest infestations, posing significant challenges for farmers. Furthermore, shifting climatic patterns have exacerbated crop risks, resulting in elevated cultivation costs for farmers. With majority of the farmers in the programme geography being small and marginal farmers owning less than 5 acres of land, these farmers exhibit limited risk tolerance and capacity to withstand climate uncertainties, rising production expenses, and market fluctuations. Consequently, they often persist with conventional agricultural methods despite their escalating costs, diminished natural resource availability, and reduced profitability. With limited livelihood opportunities, the majority of the women members in the programme geography are engaged in daily wage labour in the farms of larger landowners, leaving them with limited time to tend to their families. Through initiatives such as goat rearing, dairy farming, and catering businesses, the programme focused on creating alternate income sources for the women members to improve their livelihood conditions and contribute to their overall empowerment.

Effectiveness

- **Repairment of the spillways have stopped water leakage from the pond** due to which water remains in the pond all around the year. **This has allowed the villagers to use water from pond for irrigation even during the dry months** when usually they need water for irrigating their wheat and onion crops. It was also reported that due to the intervention, **more than 40 households can now transport water from the community pond to their fields using pump and pipeline and nearly, 80-100 acres of land can now be irrigated through pond water during the rabi season.**
- **Restoration work of canal in Valkhed village has successfully reduced water leaks and facilitated water distribution to farmlands situated farther from the canal.**
- **Increased cropping intensity was reported as one of the most significant benefits from the programme activities** with 62% (n=45) of the respondents reporting during the survey. Out of the total cultivable available to them (average of 3.7 acres), they could cultivate 73% of their land in rabi season before the programme intervention while the remaining 27% were left fallow due to unavailability of irrigation. **However, due to the programme intervention, the same respondents reported that they could now cultivate 100% of their cultivable land during the rabi season** improving their cropping intensity.
- The local farmers shared that due to decline in groundwater resources and dams, they could only provide irrigation till February and sometimes till mid-March to their rabi crops (majorly wheat and onion). Inability to provide irrigation in the later part of the season affected their crop yields significantly. **The programme activities however, allowed them to have enough water even during the dry period of March-April due to which they have seen improvement in the yield of wheat and onion.**
- All the respondents (n=30) who received support under **sustainable agriculture** have reported that their **crop yields have improved** since before the intervention. Adoption of nutrient and pest management techniques and use of vermicompost for grape, tomato, and soyabean have contributed towards **reducing crop losses** due to lack of vegetative growth and pest attacks.
- Improved yields have in turn helped the farmers in **increasing their household income from farming**. Upon enquiring it was understood, that one on average a respondent used to earn INR 8,33,571 per year (n=28) before the intervention. Post the intervention, **the annual income from farming was reported to be INR 11,64,429 which is an increase of 28%.**
- Promotion of micro enterprises around activities such as dairy and catering business by leveraging the existing SHG structures have helped the women folk to step out of the four walls of the household, taking ownership and decision making in community development.
- Additionally, respondents also reported that they have received jersey cows from the programme. The programme provided one cow each to the beneficiaries. Due to this support, **respondents reported of earning an extra INR 250 per day which amounts to around INR 7,500 per month.**
- **Installation of solar streetlights has also helped the local communities. 100% (n=24) of respondents said that they have benefited from the solar streetlights, as they helped in safer movement.** Respondents from Pade, Dahegaon, and Jambutake villages informed that leopard attacks are quite common in their area. The streetlights have been very helpful in providing safer movement to the local residents.
- Although the programme has managed to help the local communities in addressing their problems related to access to irrigation and low crop yield, the reach of the programme activities **could have been increased by covering more number of farmers**. The programme only managed to create 18 poly ponds against the target of 71. Also, the programme planned to establish one **automatic weather station** in the programme area

Parameter	Assessment from the study
	which would have helped the local farmers traverse through climate anomalies, but this was not achieved.
Convergence	<ul style="list-style-type: none"> • The programme took the help of the Gram Panchayats to identify suitable areas for construction of water conservation structures and in desiltation of existing ponds. • The programme collaborated with the Water Management Committee in Valkhed to renovate the canal flowing through the village. The committee also contributed INR 21,000 to the cost of renovation which stood at INR 3,10,000. • Krishi Vigyan Kendra (KVK) scientists were also involved during the workshops to provide training to local farmers on sustainable agricultural practices. • However, various other organisations (both government and private) had been working in the area for the betterment of the local farmers. Collaboration with such organisations would have allowed the programme to leverage their strengths and resources to further the programme activities in a more efficient manner.
Sustainability	<ul style="list-style-type: none"> • Some of the Gram Panchayats have showed interest in taking up the responsibility of maintaining the community water management infrastructures. However, the Gram Panchayats would require the necessary funds to do the maintenance and repairment work. The Water Management Committee in Valkhed also showed their willingness to continue with the renovation but they were also dependent on the state government for funds. The sustainability of the assets created under the programme is thus dependent on the willingness and capacity of the Gram Panchayat and Water Management Committee. • The programme took community contribution from the beneficiaries for establishing poly ponds (individual) and also, while providing livestock. This model of asset development has helped in creating ownership for the assets among the beneficiaries ensuring sustainability of the intervention.

3.8. Limitation

- The Integrated Tribal Village Development programme was completed in July 2022 post which the implementing partner, AFPRO had no ongoing ground presence in the programme villages. The lack of ongoing presence made it difficult to mobilise the programme beneficiaries for interviews. Also, the farmers were busy with grape harvesting during the time of our outreach efforts. The demands of the harvesting season kept them occupied in their farmlands, leaving little time for other engagements. As a result of these challenges, the team could only interact with 149 beneficiaries out of the intended 254.

3.9. Recommendation

Promoting livestock breeds that suit the local climate

- Benefits of distribution of Sirohi goats to local communities in the programme did not sustain for a longer period as most of the goats succumbed to illness within two years. Although the programme implementation team claimed that they consulted with the Livestock Department while selecting the breed of goats, however, it was reported that a breed indigenous to Rajasthan was found suitable to a high-precipitation region like Nashik. Promotion of livestock breeds that are suited to the region becomes crucial for ensuring sustainability of the intervention.

Identifying and collaborating with ecosystem players


- Many players from government and private sector have been working in the Nashik region to further the cause of sustainable agriculture by empowering the local farmers with agri-input, training, and marketing support. The programme can identify such stakeholders to develop synergistic collaborations based on common interests. This can help the programme achieve its goals in a more efficient manner. For example, Sahyadri Farms, a farmer producer company, has been supporting the local farmers by providing agri- input and marketing support. An association between the programme and Sahyadri farms would have allowed the programme to create market linkages for the programme farmers supporting them in getting better income for their produce.

Strengthening the capacity of the community institutions to manage the infrastructures created under the project

- It has been noted that the existing community institutions (Farmer Groups/ Water Management Groups) lack the necessary capacity (technical and financial) to maintain the water infrastructures and streetlights. Although certain Gram Panchayats have expressed their willingness to assume responsibility for maintaining and repairing these structures/ equipments, they face challenges due to limited funding and changes in leadership. To address this issue, the programme should consider providing the Farmer Groups or Water Management Groups (as seen in Valkhed village) with the financial and capacity-building support to ensure the long-term functionality of the structures/ equipments.

Promoting dairy as a lucrative income source for local communities

- Based on the findings in the programme area, it is recommended to focus on enhancing income augmentation activities through animal husbandry, particularly dairy farming. Given that not many households in the programme area are engaged in dairy activities, there is a promising opportunity to provide alternate income sources to the local communities. Providing training support livestock management practices and capacitating farmers to adopt techniques such as artificial insemination and silage production can enhance productivity of the livestock. Additionally, creating market linkages with established dairy players can further help the local communities get remunerative prices for their produce.



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