



Impact Assessment of Monsoon Resilient
Maharashtra (MRM) Project



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Executive Summary

Transforming Lives: Cummins 'Monsoon Resilient Maharashtra' Initiative

Cummins India Limited and Cummins Technologies India Pvt. Limited (herein referred to as Cummins), driven by a commitment to social responsibility, joined hands with the village community in Maharashtra to bring in positive change through their "Monsoon Resilient Maharashtra" (MRM) project, as part of its broader "Participatory Watershed Development and Ground Water Management Project (PWDGWM)." This initiative was driven by the vision of serving and improving communities within its operational areas. Its primary goal was to address water scarcity and reduce the dependency of local communities, particularly farmers, on monsoons. The rationale behind this project includes the tragic issue of farmer suicides, the persistent drought conditions, the mounting debt burden on farmers, the exploration of alternative income sources for farming communities, and the desire to empower them towards self-sufficiency. Action For Agricultural Renewal in Maharashtra (AFARM), Advanced Center for Water Resources Development and Management (ACWADAM) and International Association for Human Values (IAHV) served as the Project Implementation Agencies (PIA) of CIF for this project and was responsible for executing the project interventions in line with the plan and formulating the Detailed Project Report (DPR).

The MRM project was undertaken in 40 villages located in the Man Taluka of Satara from 2018 to 2022. On the supply side, the activities involved the construction of rainwater harvesting structures, as well as the promotion of water utilization and management practices. Simultaneously, on the demand side, various initiatives were executed to support sustainable agriculture, create livelihood opportunities through livestock, enhance community capacity, foster entrepreneurship, and promote the adoption of renewable energy sources.

<h3>Supply-side Activities</h3> <ul style="list-style-type: none">• Watershed development activities on existing structures• Surface area treatment like Deep continuous contour trenches (CCT), Farm bunding• Drainage line treatment such as desilting and gabion structures	<h3>Demand-side Activities</h3> <ul style="list-style-type: none">• Farm Field Schools (FFS), organic farming• Dairy, goatery, back-yard poultry• Activities with SHG – adoption and production of organic fertilizers and pesticide, vermicompost; cattle feed and biogas production units• Community capacity building on agriculture and livestock management
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Methodology

Deloitte's tailor-made approach for evaluating the impact of CIF funded MRM project and identifying potential areas of future intervention was based on substantial experience in conducting evaluations of similar nature and scope of work (SOW). A mixed-method assessment design was deployed for the assessment - this primarily focused on primary data collection through field visits and was supplemented/triangulated with the help of relevant secondary data and knowledge as available.

The Deloitte research team conducted an extensive assessment with **404 beneficiaries**, which involved **265 survey interviews** along with **19 focus group discussions** and key informant interviews with **21 stakeholders**. These beneficiaries were drawn from **14 villages** in the Man Taluka region of Satara district, Maharashtra, namely Mogrале, Tondale, Jadhavwadi, Bijavadi, Kasarwadi, Shindi Khurd, Shevari, Khutbav, Jashi, Shindi Budruk, Surupkhanwadi, Ukirde, Danavalewadi, and Vadgaon.

During their interactions with the beneficiaries, the research team collected data on various aspects, including watershed management, income-generating activities both in farming and non-farming sectors, income levels, saving patterns, credit-seeking behaviour, household possessions, and more. Additionally, the team physically verified the status of 18 structures that had been constructed as part of the supply-side activities.

Rationale of the project

India faces a considerable water stress situation, ranking it among the countries with the most precarious water reserves worldwide. The substantial repercussions of this stress were evident at the start of 2016, when two consecutive seasons of insufficient monsoon rains resulted in severe water shortages affecting 300 million Indians. This scarcity had a significant impact on agricultural and industrial sectors, leading to a reduction in agricultural yields and a substantial setback in industrial operations.

Although agriculture remains the largest employment provider in India by a significant margin, its contribution to the country's GDP has experienced a notable decline. However, there exists an untapped market opportunity due to the increasing demand for food. The annual demand for food grains in India is projected to rise to 333 million tons by 2050, up from the current 250 million tons. Additionally, economically influential sectors such as dairy, horticulture, and inland fisheries, which contribute significantly to India's international market growth, have the potential to play a substantial role in bolstering agriculture's prominence within the Indian economy.¹

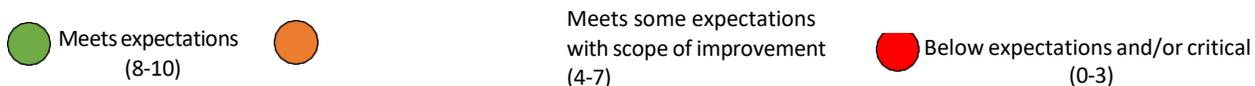
Programme implementation

The MRM project operates on a year-long implementation model, where new villages are identified every year and provided support each year to address water-related challenges. Both supply-side and demand-side activities were implemented across all the villages with support from multiple partners.

¹ https://agricoop.gov.in/sites/default/files/Co-optimizing_solutions_water.pdf

Assessment Overview

The current report presents a high-level summary of Deloitte’s observations and findings of the impact assessment of Monsoon Resilient Maharashtra (MRM) project that was implemented by CIF along the six evaluation criteria defined by OECD DAC Network on Development Evaluation (EvalNet). A summary of the evaluation findings from the sample surveyed is presented in the table below. The rating is scaled from 0-10, with 10 being the highest. The parameters that exceed expectations are scaled from 8-10, the parameters meeting expectations are scaled from 4-7 and the parameters that are below expectations are scaled from 0-3



Parameter	Rationale	Rating(0-10)
Relevance	<ul style="list-style-type: none"> The agrarian crisis in Maharashtra is aggravated as agriculture is mainly rain-fed. More than 50 percent of Maharashtra districts have irrigated area below the state average with one-third area falling under rain-shadow region with scanty rainfall. The state’s agriculture is dominated by food grains, which account for about 56 percent of gross cropped area but contributes only 16 percent of agricultural GDP. About 70 percent of the labour force in rural areas is still employed in agriculture.² Satara district experiences lower average rainfall compared to the state average, and the considerable variation in rainfall across different blocks within the district and over different years poses a significant challenge to agriculture in the region. Over 73 percent of cropped area is cultivated under rained condition in the district.³ 	 9
Coherence	<ul style="list-style-type: none"> The main source of water for agriculture in Maharashtra is groundwater; excessive withdrawals of groundwater have led to drying up of wells in several districts. Declining water tables leads to scarcity of water even for drinking purpose in large number of villages in the state; some parts of Satara district are still reeling under acute shortage of drinking water. The district still has 321 tankers supplying drinking water to 251 villages and 928 hamlets, located mainly in the eastern part of the district. The tehsils such as Man, Khatav, Phaltan, Khandala and Koregaon are known for shortage of water and low rainfall. Man, and Khatav are among the worst hit areas in the district; there are 132 tankers supplying drinking water to 90 villages and 491 hamlets in the district.⁴ 	 9
Effectiveness	<ul style="list-style-type: none"> The MRM project has achieved several project objectives in terms of implementation of activities, provision of livelihood support, capacity building and income enhancement initiatives. Despite each village being supported for only a year, the MRM project was able to complete the project within the agreed timeframe with no delays observed. 	 8
Efficiency	<ul style="list-style-type: none"> CIF involved multiple partners with experience in water management and conservation for implementation of the programme in project villages. IPs with expertise in project implementation, technical and community mobilization helped in timely and diligent implementation of work, ensuring necessary impact. 	 9
Impact	<ul style="list-style-type: none"> 59,970 lives were impacted directly and indirectly through MRM initiative. <u>Supply Side Impact</u> 6,898 beneficiaries were impacted through supply side activities. As per the estimates provided by the technical partner, total recharge potential generated by 983,392 cubic meters of area treatment will yield a recharge potential of 2,950,176 cubic meters, translating to a savings of 2.9 billion liters of water. 	

^{2,4} MRM Project Annual Report – April 2019-March 2020

³ <https://kvksatara2.icar.gov.in/df.pdf>

- **332,072 cubic meters** of area was covered for DCCTs and CCTs impacting around 2,493 beneficiaries in 28 project villages.
- **445,981 cubic meters** of area was covered under Farm bunding impacting around 3,433 direct beneficiaries in 28 villages.
- **205,339 cubic meters** of area was covered under desilting impacting around 589 direct beneficiaries in 16 villages.
- **247 gabions** were constructed in 23 villages covering almost 383 direct beneficiaries which helped villages in controlling the flow of water and soil runoff at the elevation point.
- **7,910 trees** were planted in 5 villages covering an area of 37 Acres.
- **Demand side Impact.**
- **8,050 beneficiaries** were impacted through demand side activities.
- More than 60% of the beneficiaries reported that due to the creation of watershed structures the proportion of wasteland has reduced leading to availability of more fertile land for crop farming.
- **100% beneficiaries** confirmed reduced dependence on water tankers.
- Beneficiaries confirmed cultivating 2 to 3 seasons every year due to availability of water in village waterbodies such as wells and borewells and adopting water crises mitigation practices.
- 30% of the sample beneficiaries confirmed producing additional crops specially cash crops such as sugarcane, onion, mango, and pomegranate.
- All beneficiaries confirmed adoption of low-cost mechanization practices by successful introduction of modern and proven agricultural technologies.
- **100% women beneficiaries** implemented organic farming practices and received training on awareness and in-house production of organic fertilizers/pesticides to enable reduction in production cost.
- More than half of beneficiaries confirmed that due to increased agricultural production there has been availability of additional produce for sale leading to increase in their income.
- 40% beneficiaries adopted water budgeting and drip irrigation thereby saving on expenses incurred during farming.
- **3,879 beneficiaries** received livestock support under the project.
- All beneficiaries experienced increase in income after adoption of alternate livelihood opportunity.
- More than half of the women beneficiaries started a mini dairy business after receiving livestock support and training under the project.
- 20% sample beneficiaries reported annual average **saving of INR 10,000-15,000/-**.
- **70% sample beneficiaries** are selling milk and eggs leading to increased income.
- Income was also generated by selling goats at INR 6,000-10,000 and cows at INR **40,000-50,000/-**.
- 80% sample beneficiaries received capacity building trainings under the project.
- 50% sample women beneficiaries attended livestock trainings.



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Sustainability

- The watershed development structures created helps aid in regulating water flow, preventing soil erosion, and promoting groundwater recharge. It further ensures the long term effectiveness of these structures in managing water resources, mitigating floods, and maintaining a consistent water supply for various uses.
- The programme has met its objective of preserving and conserving water resources. To ensure a seamless transition and prolonged sustainability of the accomplishments, CIF is advised to provide community support for a minimum of 1-2 additional years.
- Increased efforts in establishing Community Based Organizations (CBOs) can contribute to the ongoing village and community development initiatives by making them self-reliant and training them in watershed management activities.
- CBOs add to the sustainability of the programme as it creates ownership of the community in bringing development of the people in particular and village as a whole.
- Post-project monitoring process to ensure that interventions continue to benefit the target communities effectively and will help track the long-term impact of the programme
- Enhancing communication and collaboration between the Implementing partners will bolster coordinated efforts on the field, thereby maximizing the overall impact



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INTRODUCTION

1. Introduction

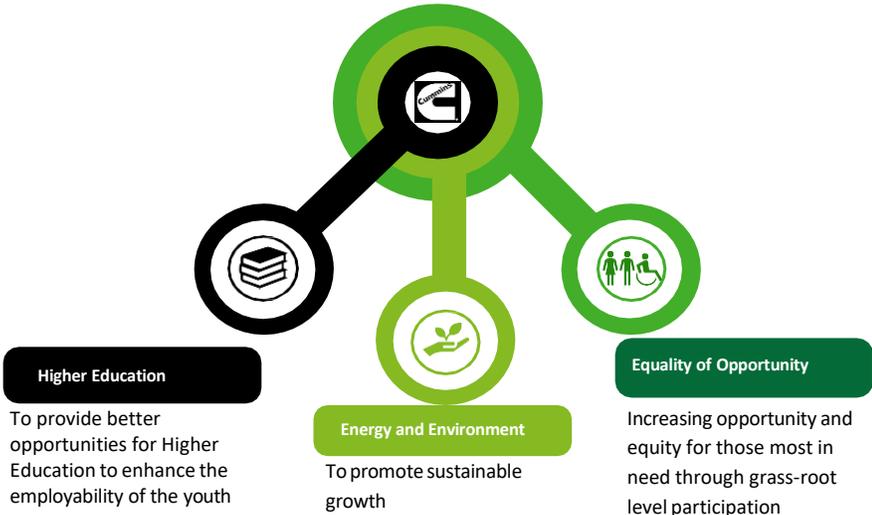
1.1. Background

Cummins India Foundation (CIF)⁵

Cummins India Foundation (CIF) was established in 1990 and primarily focuses on three principal domains: **higher education, energy and environmental initiatives**, and the enhancement of local community infrastructure.

The Foundation forges close partnerships with civic organizations, non-governmental organizations, government bodies, and local communities to achieve the organization's mission of "Enriching people's lives by fostering a more prosperous world." This mission is pursued with the following objectives:

- Creating lasting prosperity for all stakeholders, whether they are within or outside of Cummins.
- Motivating and empowering our employees to actively participate in enhancing communities, thereby making them more vibrant places to live and work.
- Nurturing an environment built on trust and collaboration by establishing partnerships with our stakeholders to drive ongoing improvements.
- Identifying universal priorities that hold relevance across various communities and utilizing Cummins' global presence to amplify our impact in these areas.



The MRM project was jointly funded by two entities of the Cummins group – Cummins India Limited (CIL) and Cummins Technologies India Pvt. Limited (CTIPL). Formed in 1962, CIL is the country's leading manufacturer of diesel and natural gas engines and is one of the seven legal entities of the Cummins Group in India.⁶CTIPL was formed in 2008 and the entity encompasses eight divisions.⁷

⁵ <https://www.cummins.com/en/in/company/corporate-responsibility/global-impact/cummins-india-foundation>

⁶ <https://www.cummins.com/en/in/company/india-companies/cummins-india-limited>

⁷ <https://www.cummins.com/en/in/company/india-companies/cummins-technologies-india-pvt-limited>

1.2. Monsoon Resilient Maharashtra (MRM) project

Cummins India Foundation (CIF) formulated an innovative vision aimed at addressing national priorities and contributing to societal value creation through the introduction of an initiative called the “Participatory Watershed Development and Ground Water Management Project (PWDGWM).” The central focus of this initiative was to build social and economic capital by prioritizing environmental preservation and groundwater sustainability in regions affected by cyclical droughts.

Under the banner of "Monsoon Resilient Maharashtra," CIF's vision was to serve and uplift communities within its operational areas. This initiative placed a strong emphasis on combatting water scarcity and reducing the dependency of local communities, particularly farmers, on monsoons. This objective was achieved through the implementation of measures that bolstered their resilience and self-sufficiency, such as soil and water conservation efforts to harness recharge potential areas. Following land treatments aimed at conserving soil moisture, wells and bore wells were recharged, enabling farmers to cultivate in both seasons. However, significant disparities in technology adoption by farmers for their existing livelihoods were observed. Consequently, the project undertook activities to enhance farmers' existing livelihoods by providing them with the necessary skills and knowledge in appropriate technology. The PWDGWMP initiative was executed in 40 villages in the Man block of Satara, spanning the years 2018 to 2022.

1.3. Scope of Work

Cummins India Foundation (CIF) entrusted Deloitte to carry out a social assessment of the impact of its long-standing MRM initiative. The scope of Deloitte's advisory services to CIF included the following:

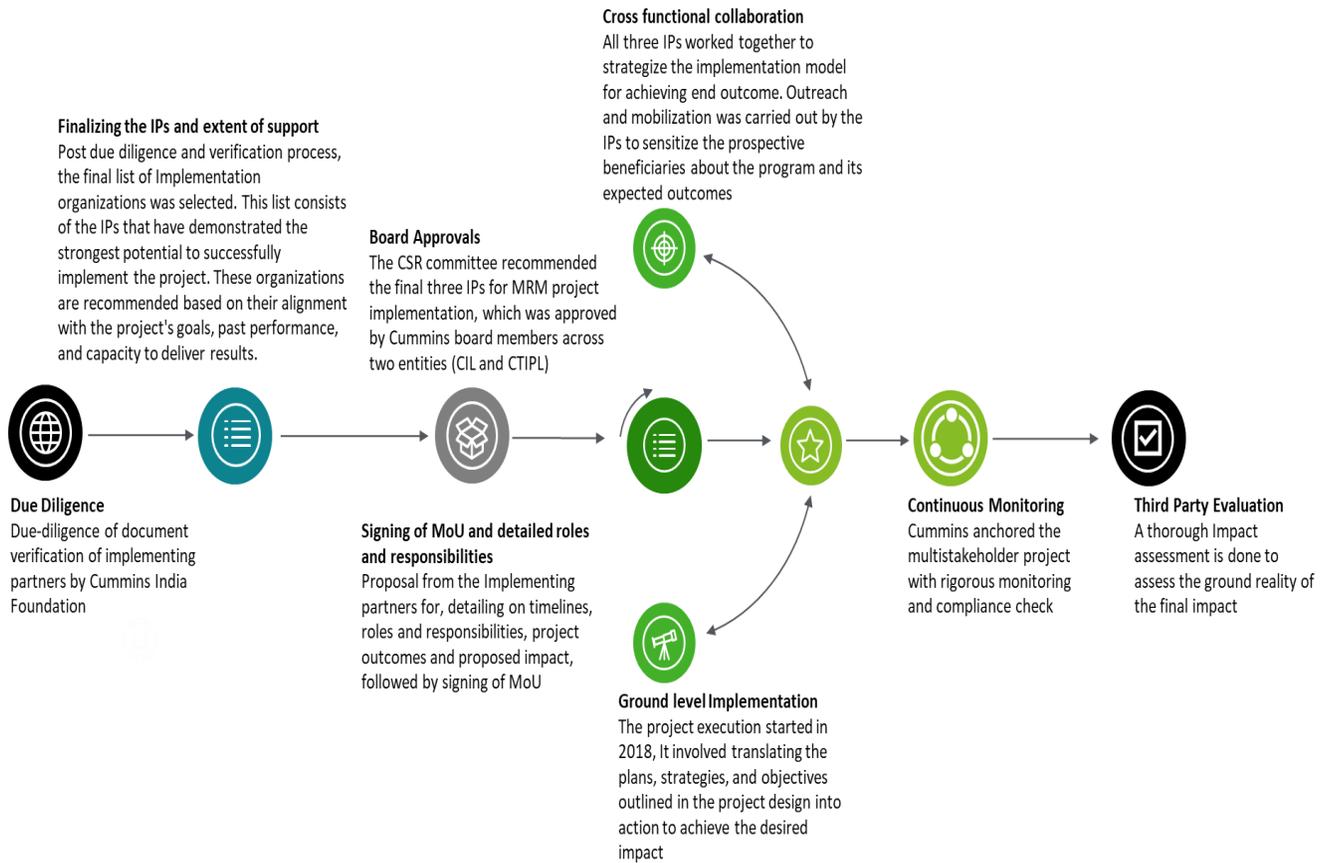
- Evaluate the social impact of the MRM programme by examining the following aspects:
 - Assess the inputs, processes, and validate programme outputs
 - Examine changes in the initial and final status of project objectives (based on available data)
 - Investigate the sustainability of the project's implementation
 - Comprehend and document key socio-economic outcomes and both direct and indirect impacts of watershed-related interventions over the course of five years
- Perform a comprehensive analysis of stakeholders' perceptions and assess the programme's influence on the local communities
- Identify and document noteworthy best practices observed during the programme's implementation, while also highlighting any existing gaps or challenges
- Offer strategic insights and recommendations for the future direction of the MRM programme, grounded in the findings and insights gathered.

1.4. Project Planning and Implementation

The MRM project was initiated to address the pressing water challenges in the Man block of Satara, recognizing the region's susceptibility to drought. With CIF at the centre, three implementing partners, each bearing unique roles and responsibilities, converged to bring the project to life on the ground. The synergy among the IPs were evident, as they seamlessly worked together to achieve the envisioned impact.

- Gram Panchayats of the villages expressed their interest in participating in this initiative, accompanied with the necessary resolutions to ensure the project's success, which were submitted to AFARM.
- Multiple partners with expertise in planning and executing watershed and groundwater management projects were engaged. ACWADAM known for its groundwater management proficiency, specializing in GIS-based watershed project planning, was strategically involved as a technical partner. AFARM, experienced in planning and implementing participatory watershed development projects, played the role of the implementing partner. Additionally, IAHV, with its expertise in community mobilization, was partnered for community outreach and awareness.
- ACWADAM conducted detailed mapping to identify potential recharge areas based on geological conditions. These identified zones were chosen for the implementation of watershed measures aimed at enhancing groundwater recharge.
- GIS platform was developed for planning watershed measures during both phases. The approach involved selecting third-order streams for treatment planning. Existing water conservation structures situated in potential recharge zones underwent desilting, and area treatments were planned within the catchment of these structures.
- Community engagement was a pivotal aspect of the project and hence IAHV regularly organized village meetings to mobilize the community.
- The procurement of resources followed a meticulous tendering process. All implementing partners were unwavering in their commitment to this process, ensuring transparency and accountability in the allocation of resources. Secure goods and services in the correct quantity, meeting high-quality standards, and adhering to stringent timelines, ensured efficiency.
- The execution of soil and water conservation measures involved machine work, while tasks such as bund dressing and gabion structure construction were carried out by laborers.
- Post-implementation of watershed activities, various initiatives were undertaken to boost farmer's income levels and promote alternative livelihoods, with a particular focus on women entrepreneurs through training and capacity building.
- Throughout the project's duration, numerous consultative meetings were held with project partners to establish the implementation pathway.
- CIFs monitoring was instrumental in addressing challenges promptly, thus ensuring the project's smooth progression. The seamless communication and collaboration among the stakeholders were instrumental in achieving the desired impact, making the MRM initiative a beacon of effective and transformative community development led by CIF.

Project implementation milestones



A close-up photograph of a vibrant green leaf in the upper right corner. A single, clear water droplet is suspended in mid-air, having just fallen from the leaf. Below the droplet, a pool of water reflects the scene, with concentric ripples emanating from the point of impact. The background is a soft, out-of-focus gradient of light blue and green, creating a serene and natural atmosphere.

APPROACH & METHODOLOGY

2. Approach and Methodology

2.1. Project approach

The project's approach was formulated in alignment with its goals, scope, and Deloitte's past involvement in similar projects. It was collaborative and well-founded, founded on engagements with key stakeholders, supported by thorough primary and secondary research, and bolstered by domain expertise. The assessment design employed a mixed-method approach, with a primary emphasis on collecting primary data through surveys, on-site visits, and engaging with key stakeholders. This was further enhanced and corroborated with relevant secondary data and available knowledge.

Data for the assessment was collected to answer the following research questions:

1. How relevant and effective is the collaborative structures of client and implementing partner if any for achieving the programme objectives?
2. How effective and efficient is the programme?
3. What has been the progress in operationalizing the strategy? What have been the challenges in this regard?
4. What is the current and projected performance/effectiveness, and course corrections for improvement, if any?
5. What role does the community see in this transformation?
6. Explore opportunities for collaborations and aligned action with the government or any other organization(s) to sustain and scale the intervention.
7. How is sustainability of the project ensured?

2.2. Project methodology

The impact assessment adhered to the definition of impact outlined in the International Fund for Agricultural Development (IFAD) evaluation manual, which encompasses both direct and indirect, intended, and unintended, primary, and secondary long-term effects of a development project. The research methods were meticulously crafted to encompass the comprehensive impact of the project by engaging with a diverse group of stakeholders. The assessment was built upon a combination of qualitative and quantitative research designs to measure the changes in the lives of project beneficiaries.

To collect information on programmatic impact, results indicators aligned with the UNDP's Results Based Framework were employed. This involved a comprehensive review of both primary and secondary project-related data to obtain a well-rounded understanding of the implementation model and the resulting outcomes and impact.

Water Conservation, Agriculture, and livelihood

Inputs	Activities	Outputs	Outcomes
<ul style="list-style-type: none"> • Human resource • Financial resources • Capacity building of staff and community • Partnerships • Infrastructure, equipment, technology 	<ul style="list-style-type: none"> • Hydro-geological Mapping • Creation of GIS platform for identifying potential recharge zone • Village and site selection for project implementation • Mobilization of community members • Training and capacity building-, SHGs, Gram panchayat, village leaders • Exposure Visits of community • Techniques promoted for livestock development • Supporting women with livelihood interventions such as Water, poultry, dairy farming, model farming, etc. • PRA exercise for implementation planning • Implementation of planned activities • Construction of water and soil conservation structures • Renovation of water structures/desilting existing water bodies • Awareness campaigns on water management 	<ul style="list-style-type: none"> • No. of farmers benefitted • Acres of land covered and brought under irrigation • Increased water capacity • Number of farmer field schools created (FFS) • No. of farmers attended FFS • No. of farmers adopted sustainable farming techniques • No of women attending trainings on organic input production • No. of women farmers who adopted alternative livelihoods • No of women attending training on dairy business management • No of techniques promoted for livestock development • No. of villages reached • No. of rainwater harvesting, and soil conservation structures, drip irrigation units created • No. of water structures renovated • No. of vermicompost beds set up 	<ul style="list-style-type: none"> • No. of crop cycles • Improved irrigation facility • Improvement in farm productivity • Improvement in livelihood avenues • Increase in income • Increase in savings • Reduction in migration • Enhanced water security • Increase in resilience towards climate change • Increased participation of women in community meetings • Independent decision-making by financially empowered women • Increased savings at SHG level

Desk review and secondary research

The research team initiated the process by conducting an introductory call with specific members of the NGO partner to gain insights into the programme's intricacies. Subsequently, the team delved into the initial project documents to gain an understanding of the project's overall context. They identified, harnessed, and assessed available data sources to pinpoint particular details that would be further investigated during the primary data collection phase. The documents under review included:

- Project MoUs with IPs
- Project budget and utilization reports
- Project baseline data and hydrogeology report
- Project annual reports
- Project MIS reports

Stakeholder mapping

Primary and secondary stakeholders for the project were identified and mapped during the assessment. A list of stakeholders mapped are given as below:

Primary Stakeholders	Secondary Stakeholders
<ul style="list-style-type: none"> • Farmers • Agricultural laborer's • Women beneficiaries • Self Help Groups (SHGs) • Gram Panchayat 	<ul style="list-style-type: none"> • Programme Manager (AFARM, IAHV and ACWADAM) • Field Staff (AFARM and IAHV) • Head, CSR and ABO, CSR – CIF

Study tools

A range of participatory tools were customised to meet the objectives of the assessment. The table below presents a snapshot of the tools used during various stakeholder interactions during the assessment:

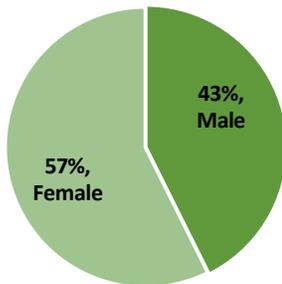
Stakeholder	Key Themes covered	Study Tools employed
Primary Beneficiaries	<ul style="list-style-type: none"> • Experience of community involvement in the programme • Impact of the programme on farming and livelihood • Impact on community members, especially women and children • Water availability and accessibility experience • Impact on farming and livelihood 	KII, FGD, Survey
Secondary Beneficiaries	<ul style="list-style-type: none"> • Stakeholder collaboration • Financial empowerment • Inclusion of women, advocacy, and representation 	KII, FGD
Implementing team	<ul style="list-style-type: none"> • Stakeholder management and government collaboration • Groundwater Management & Participatory Watershed Development • Technical inputs and guidance on training and capacity building • Community decision making and conflict resolution • Awareness campaigns 	KII

Sampling

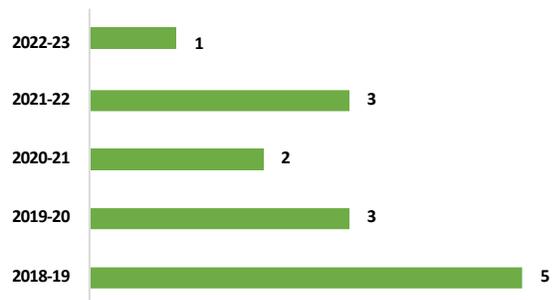
For the impact assessment, a statistically significant sample size interval for basing results of the study was calculated. The sample size was covered through various mediums as outlined in the table below:

Stakeholders	Sampling Method	Sample Covered	Tools Employed
Villages	Purposive	14	Physical site visit
Beneficiaries	Probability Proportionate to Size	404	Survey Focussed Group Discussion (FGD) Case studies
Watershed structures	Random and Purposive	18	Infrastructure checklist (physical visit) Key Informant Interview (KII)
Implementing Team	All available	18	Key Informant Interview (KII)

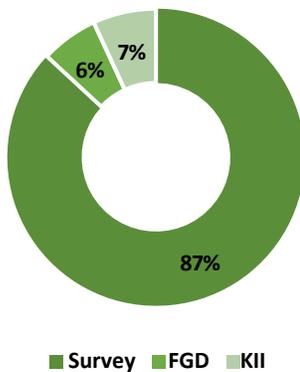
Sample Coverage (Survey)



Villages covered (Year of Intervention)



Data Collection Methodology



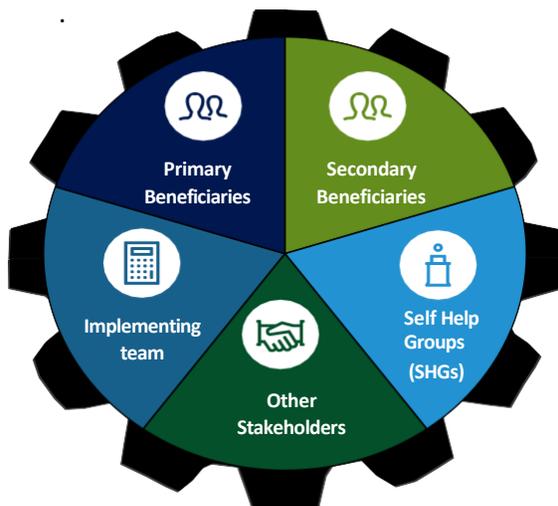
Out of the data collected across **14 villages** covering **404 beneficiaries**, surveys were the predominant method, comprising **87% (265)** of the data, followed by key informant interviews at **7% (21)** and focus group discussions at **6% (19)**. Of the 265 surveyed beneficiaries, **57% (152)** were female and **43% (113)** were male. Additionally, the Deloitte field team conducted a transect walk during their visit to the project villages, covering the intervention years from 2018 to 2022. This walk aimed to observe the implemented activities, including goatery, poultry, silage units, plantation, supply-side structures, and more. It also involved documenting case studies of the project beneficiaries

2.3. Study Design

The impact assessment of the CSR initiatives was executed in a phased manner. The four main phases are outlined below:



2.4. Field level stakeholder interactions



- Field visits for the primary research component was conducted by 5-member Deloitte team from the 4th of September to 8th of September 2023
- Total number of 14 villages were covered and 18 watershed structures were observed, along with interactions with multiple stakeholders



Deloitte team with MRM project implementing partners on field



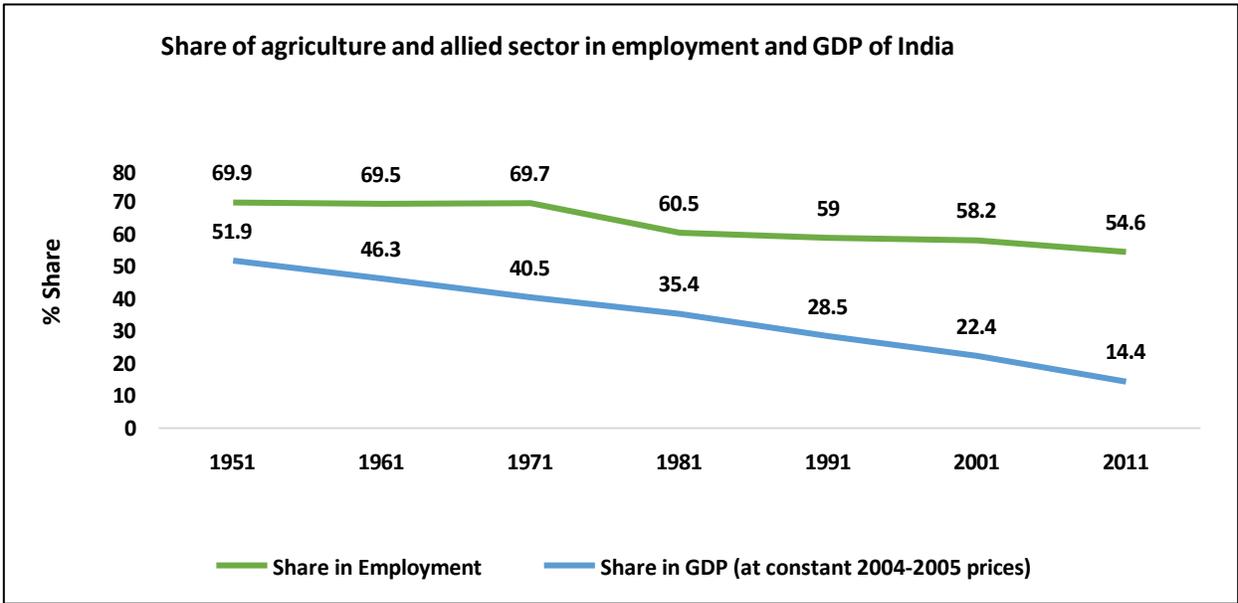
RATIONALE FOR THE
PROJECT

3. Rationale for the project

3.1. Water crises

India is confronted with significant water stress, placing it among the nations with the most vulnerable water reserves globally. The substantial consequences of this stress became apparent in the beginning of 2016, because of two consecutive seasons of inadequate monsoons, which led to severe water scarcities for 300 million Indians. This scarcity had a notable impact on agricultural and industrial outputs, with a decline in farm production and a substantial blow to industrial activities. It is estimated that the agricultural sector accounts for almost 90% of the total water consumption in India. Recognizing and appropriately dealing with inefficiencies in water usage within the agricultural domain holds the solution to achieving effective water management in the country.

The contribution of agriculture to India's GDP has undergone a substantial decline, even though it remains the largest employment provider by a considerable margin. The escalating need for food presents a substantial market opportunity that is yet to be tapped. The yearly requirement for food grains in India is projected to increase to 333 million tons by 2050, a rise from the current 250 million tons. Moreover, economically dominant sectors like dairy, horticulture, and inland fisheries, which contribute significantly to India's international market growth, have the potential to play a substantial role in enhancing agriculture's role within the Indian economy. Nevertheless, the agricultural sector in India functions with limited resources of land and water that are already stretched to their limits. Employing resources wisely is imperative to enhance agricultural output and improve trade practices in the sector.⁸

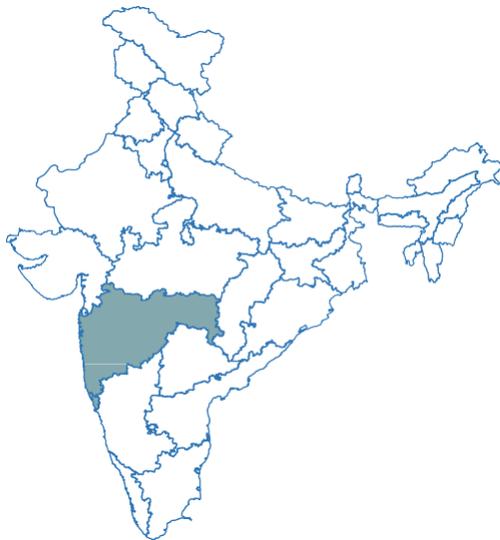


Source: Ministry of Agriculture, Cooperation and Farmers Welfare, 2016

⁸ https://agricoop.gov.in/sites/default/files/Co-optimizing_solutions_water.pdf

3.2. Geographical Context

3.2.1. Maharashtra



The state of Maharashtra holds the highest position in terms of its contribution to the national GDP. Its economic growth has been consistently strong, with an average annual rate of 8 percent from 2005-06 to 2015-16. With 9.3 percent of country's population and 9.4 percent of the country's geographic area, Maharashtra is the 2nd populous state and 3rd in terms of geographical area. This state exhibits a higher degree of urbanization and industrialization compared to the rest of the nation. The industrial and service sectors play a significantly larger role in its economy than agriculture and related fields. Nevertheless, the agricultural sector retains its central importance in Maharashtra's economic and political landscape and is particularly crucial as more than half of the state's population relies on agriculture for their livelihood. During 2022-23 the State economy is expected to grow by

6.8 percent while the 'Agriculture & allied activities sector is expected to grow by 10.2 percent and accounts for an average 12.1 per cent share in the Gross State Value Added.⁹

Approximately one-third of the state's territory lies within the rain-shadow region, characterized by scarce and unpredictable rainfall. The portion of land used for cultivation represents around 54 percent of the State's total geographic expanse. In Maharashtra, the agricultural sector has demonstrated an annual average growth of 3.5 percent between 2004-05 and 2014-15. However, this growth exhibits significant fluctuations, heavily reliant on the erratic patterns of rainfall during specific years and over time. Rainfall distribution across the state is notably uneven, varying from over 4,000 mm per year in coastal areas to less than 400 mm in the most arid districts. Agriculture remains the largest consumer of freshwater, utilizing over 80 percent of the available surface and groundwater resources (referred to as "blue water") within the state.

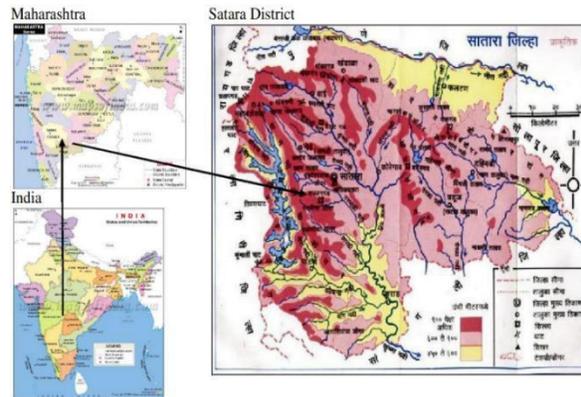
Considering that sustaining the State's robust economic growth necessitates increased water availability across all sectors, Maharashtra faces the imperative of effectively managing its water resources. A key focus lies in improving water usage efficiency within the agricultural domain, while also enhancing the accessibility and utilization of "green water" (rainwater stored in the soil as soil moisture) by the agricultural sector. The state has been adversely impacted by successive droughts in recent years, significantly affecting agricultural performance and rural communities. In response, top-level state authorities have prioritized the goal of rendering agriculture drought-resistant, recognizing it as a pivotal developmental objective for Maharashtra.¹⁰

⁹ Economic Survey of Maharashtra 2022-23, Directorate Of Economics and Statistics, Planning Department, Government Of Maharashtra

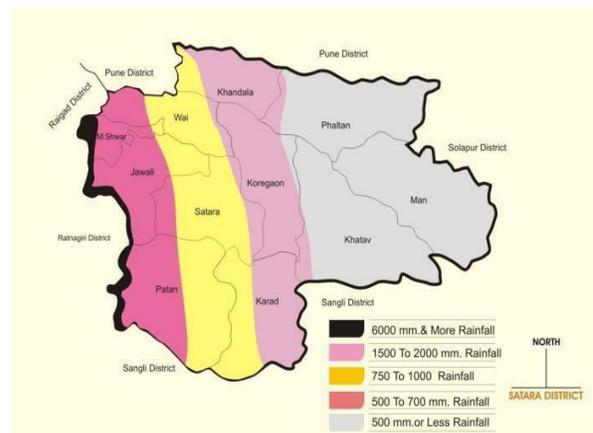
¹⁰ The World Bank, Maharashtra Project on Climate Resilient Agriculture

3.2.2. Satara

Satara district, situated in the western region of Maharashtra, spans an area of 10,480 square kilometres, accounting for approximately 3.4 percent of the state's total landmass. According to the 2011 Census, the overall population of Satara district was recorded at 30.04 lakhs. The gender distribution among the population shows that 46.87 percent are male, while 53.13 percent are female. A significant majority of Satara's population, specifically 81 percent, which amounts to 24.34 lakhs, resides in rural areas, with 5.70 lakhs residing in urban zones. The district's workforce is comprised of 13.04 lakhs individuals, representing 46.41 percent of the total population engaged in economic activities. Among this workforce, a substantial 70.06 percent, both main and marginal workers, are involved in agriculture, a percentage notably higher than the state's average of 55 percent. Within the agricultural workforce, 30.8 percent are agricultural laborers, while the remaining 69.2 percent are cultivators



The monsoon hold a pivotal role in shaping the agricultural landscape of Satara, with over 73 percent of cultivated land relying on rain-fed conditions. However, the district's average annual rainfall falls below the state's average, and the considerable variability in rainfall across different blocks within the district presents a significant challenge to agriculture in the region. The climate spectrum within the district ranges from extremely heavy rainfall in the Mahabaleshwar region, boasting an average annual precipitation exceeding 6,000 mm, to the driest conditions found in the **Man block**, where the average annual rainfall measures around 500 mm.¹¹



Source –www.agri.mah.nic.in

¹¹ <https://kvksatara2.icar.gov.in/df.pdf>

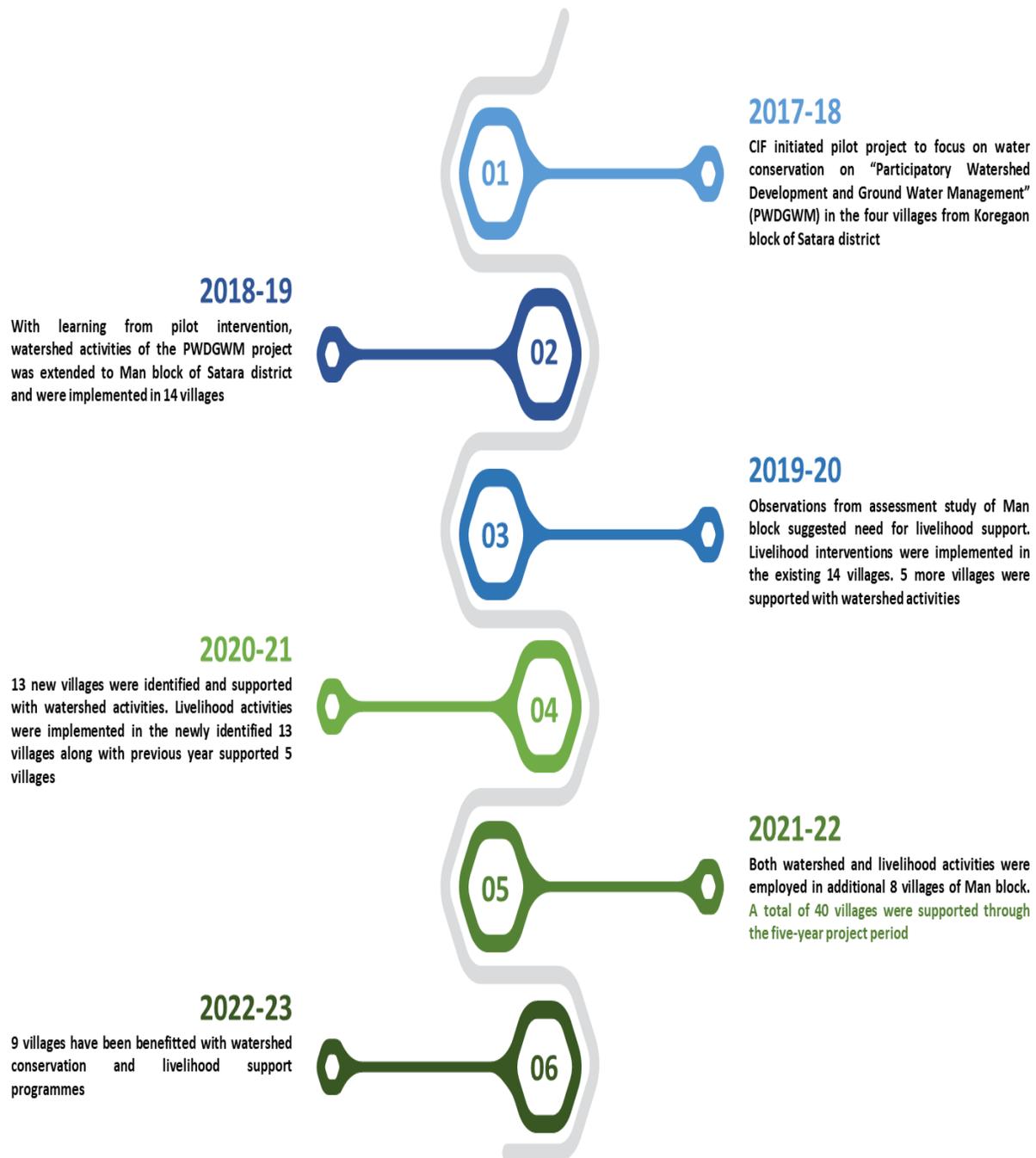


PROJECT MODEL

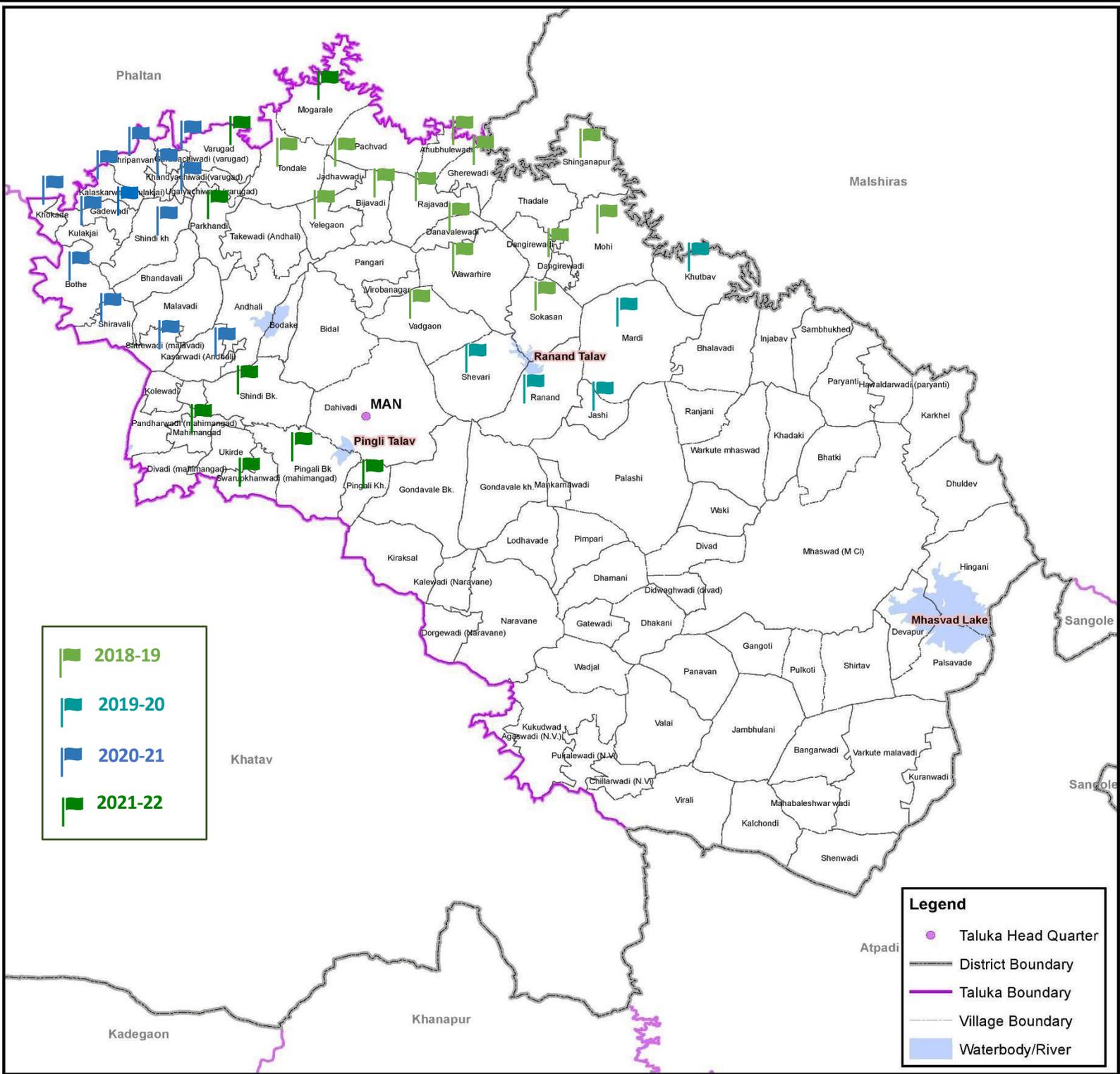
4. Project Model

4.1. Programme 5-year journey

The MRM project started in 2017 with a pilot project in Koregaon block of Satara district, Maharashtra. From the learnings of the pilot project, water conservation and livelihood enhancement programme were therefore implemented in Man block, Satara impacting 40 villages till 2022.



4.2. Intervention Villages



https://mrsac.gov.in/writereaddata/MRSAC/map/15674909855d6e03a97d363TH_STR_Man.pdf



The MRM project was introduced in 40 out of 103 villages within the Man block. These selected villages are in the severely drought-prone areas of Satara district and are situated approximately 77 kilometers from the district headquarters. Additionally, they are around 17 kilometers from the tehsil headquarters in Dahiwadi, encompassing a total geographical area of 61,630.64 hectares. The project area's geographical coordinates range from 17029' to 17040' North latitude and 74028' to 74047' East longitude. These villages are in proximity to the northern border of Phaltan, the western border of Khatav, and the eastern border of Malshiras.

As per the 2011 census data, the Man Block in Satara district, Maharashtra, had a total population of 2,39,363, comprising 1,21,178 males and 1,18,185 females. The intervention villages constitute 25% of the entire population of Man, which is 59,970 people. The male and female beneficiaries of the project amount to 30,242 (51%) and 29,728 (49%) respectively.



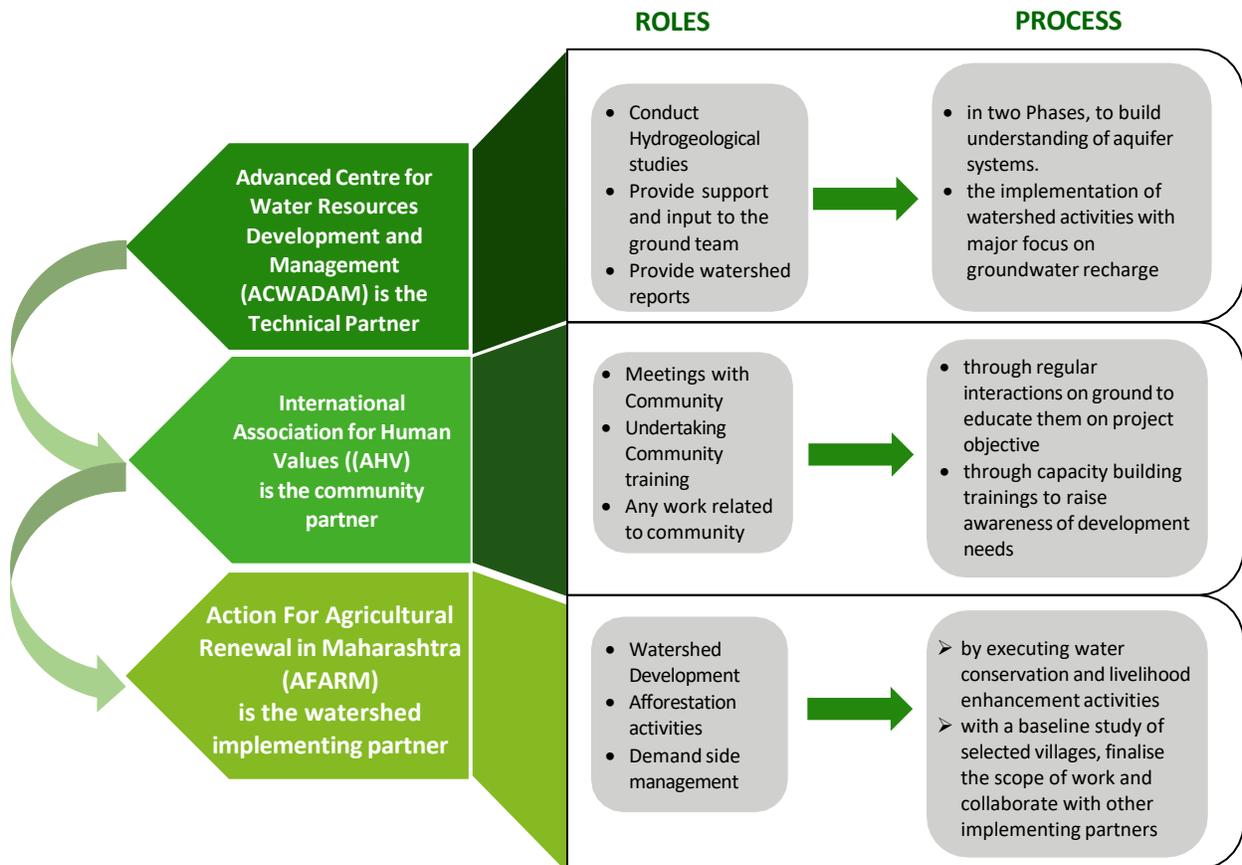
Tree Plantation at Bijavadi village

4.3. Role of Implementing Partners

The project was executed through a collaborative effort involving three distinct implementing organizations, each operating at various tiers within the target villages.

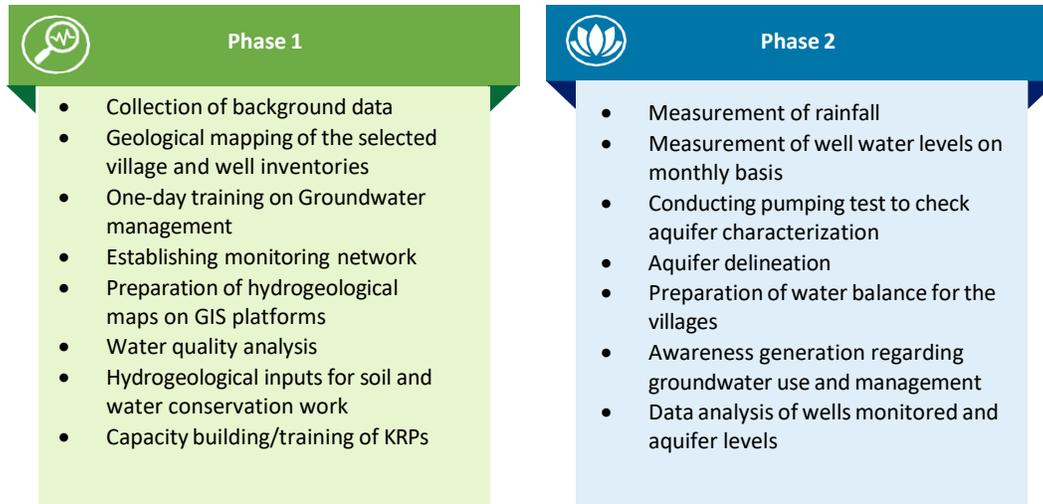


- **ACWADAM** - A not-for-profit organization with a mission to facilitate work related to groundwater management in various parts of India.
- **IAHV** - A partner organization of the Art of Living, focuses on empowering people and communities, with inclusive and sustainable development interventions, fostering universal human values.
- **AFARM** - A partner organization that provides drinking water and agricultural extension services to villages in drought affected areas of Maharashtra.

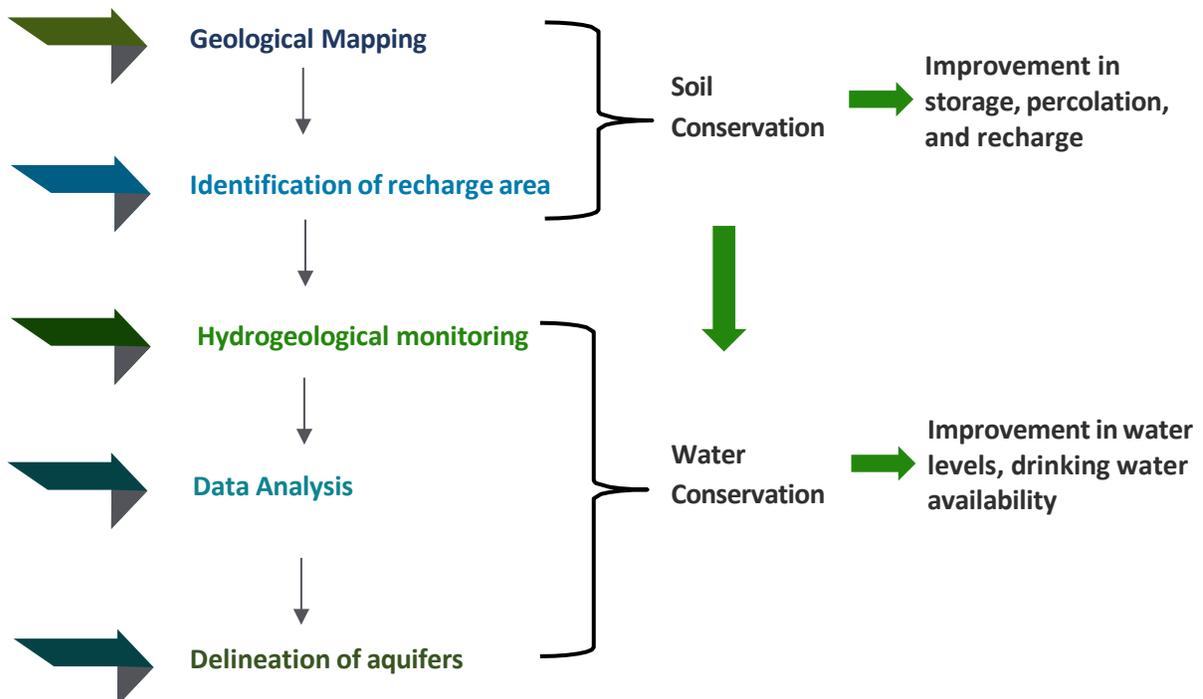


4.4. Implementation Model of all three IPs

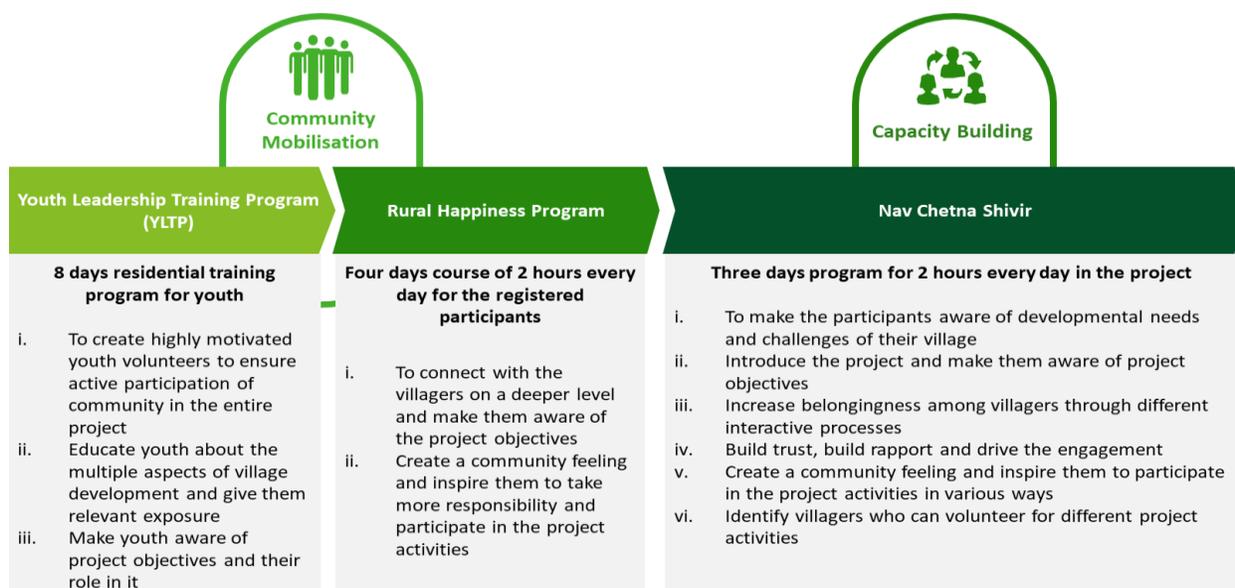
ACWADAM- In an area where there are no constant streams or natural springs, the villages in this watershed depend entirely on groundwater for their water needs – for drinking, everyday use, and farming, using big wells and boreholes. ACWADAM was entrusted with the crucial task of conducting a comprehensive feasibility assessment for the selected villages. Their role also encompassed gathering vital data concerning the current infrastructure and identifying potential areas for water recharge and doing well inventory. ACWADAM worked in two phases and the detailed Implementation model are explained below:



Step by Step Process



IAHV- IAHV, serving as a catalyst for community engagement, played a fundamental role in the project. Their core objective was to raise awareness among the local population and foster an environment conducive to community development programmes. It was necessary to connect with community on ground, who initially were hesitant. IAHV maintained regular communication with the community, educating them about their village's water situation. Executed with a well-planned strategy, IAHV assumed a central role in ensuring smooth project execution by facilitating social coordination, resolving conflicts, and promoting harmonious collaboration among all stakeholders. Here's a detailed breakdown of IAHV's training programmes and their objectives.

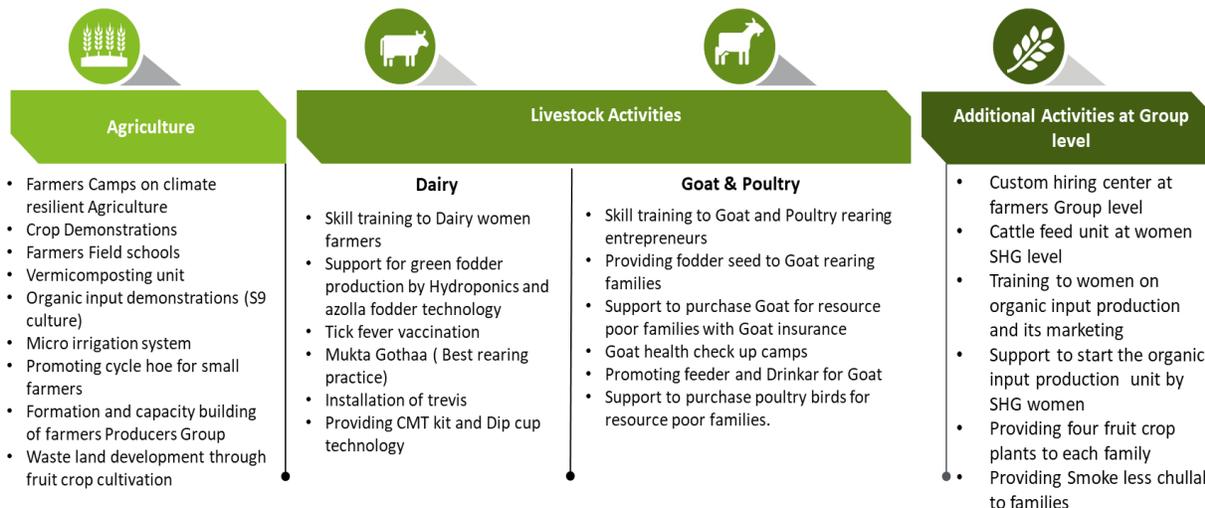


Activities covered under each training programme

- Personality development, which includes mindfulness, decision making, communication and leadership skills trainings
- Village development, which includes zero budget farming, rainwater management, natural resource management trainings
- Process to understand mind and body, ways to boost immunity, healthy diet, breathing and meditation techniques, awareness of the physical environment and creativity and optimism and volunteer for the betterment of village
- Discussions on village systems, importance of 5 elements of nature, discussion on agriculture problems, understanding importance of team building and ownership, understanding water system

AFARM- Watershed management is a comprehensive approach that focuses on making the best use of land, water, and plant resources in a particular area. It was important to improve how water soaks into the ground through land treatments and to increase the capacity for storing water by removing silt. Apart from these efforts, there were also long-term plans for improving soil quality, agriculture, and supporting people's livelihoods. This was done in different stages, with a strong emphasis on building community institutions and improving their abilities. AFARM worked on making sure farmers could take charge of their own resources, helping them ensure a stable water supply for their farms and create new income opportunities beyond farming. Represented below is a detailed version of activities undertaken by AFARM under Demand and Supply side activities

Demand-side activities



Supply-side activities



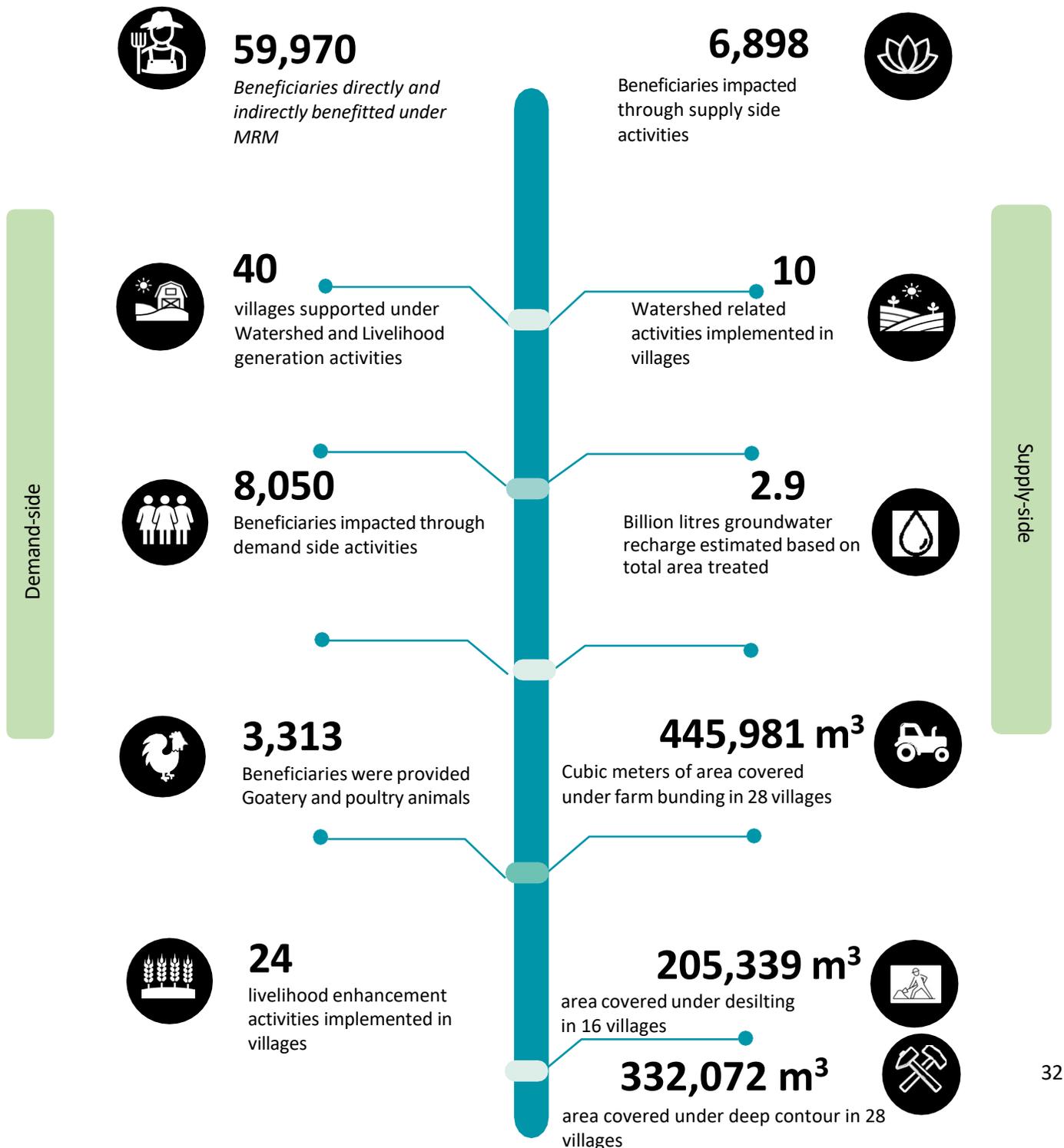


IMPACT ASSESSMENT
FINDINGS

5. Impact assessment findings

5.1. Coverage Snapshot

The Cummins India Foundation supported Monsoon Resilient Maharashtra project whose key focus is to tackle water scarcity and reduce the reliance of local communities, especially farmers, on monsoons by implementing measures that enhance their resilience and make them self-sufficient. The outreach of the initiative through the FY 2018-22 grant is presented below:



5.2. Watershed structure development

High level analysis of hydrogeological study and watershed development interventions

- Hydrogeological study conducted in 40 villages between 2018-22
- Data of wells monitored, and aquifer level confirmed improved ground water recharge and soil conservation
- 2.9 Billion litres of groundwater was estimated to be recharged. Farmers confirmed adoption of third crop due to groundwater availability
- Increase in crop diversification due water availability



Year	No. of villages	Wells monitored
2018-19	14	251
2019-20	5	130
2020-21	13	139
2021-22	8	87
2018-22	40	607



Well water monitoring in Vadgaon



Well monitored in Tondale



Rain gauge installed in Surupkhanwadi



Well monitored in Surupkhanwadi

Watershed structures

Deep Continuous Contour Trenches and Continuous Contour Trenches

- Deep CCTs and CCTs were constructed on the hilly areas with an aim to reduce the water and soil runoff. Continuous Contour Trenches and Deep Continuous Contour Trenches helped impacted villages by limiting soil erosion and lowering water runoff rates, which increased water percolation in these villages.
- These structures also improved soil quality, replenished groundwater, increased local vegetation cover, and revitalized degraded regions. **During 2018-2022, in 28 villages, 332,072 cubic meters of area was covered for DCCTs and CCTs impacting around 2,493 beneficiaries .**



Deep CCT work observed in Vadgaon village



Deep CCT work observed in Khutbav village

Gabion Structures



Gabion work observed in Tondale village

- Gabions in MRM were constructed to stabilize slopes with seepage issues, non-cohesive soils, or to reduce the velocity of concentrated runoff. Gabion in these intervened villages were built as a cover wall, although its primary function is to stabilize the soil behind the wall.
- Depending on the wall's height, gabion baskets were placed in one or more rows to form the wall. Baskets were closed on all sides and resemble cages. They were constructed with broken rock that is put into baskets and galvanized hexagonal meshes. In the field of soil stabilization, retaining structures—which are created by carefully stacking gabion baskets—offered an alternative to concrete structures.
- **A total of 247 gabions were constructed during the time-period of 2018-22 in 23 villages** and covering almost 383 direct beneficiaries. These gabions helped villages in controlling the flow of water and soil runoff at the elevation point.

Farm Bunding

- Farm bunds are retaining walls that demarcate agricultural fields. These farm bunds helped farmers in preventing soil erosion and preserving healthy soil as the walls helped in collecting the rainwater directly in the field. Farmers during interaction reported that it helped their land in maintaining moisture for a longer duration which resulted in better crop production.
- Farm bunding activity was carried out in **28 villages** impacting around **3,433 direct beneficiaries covering an area of 445,981 cubic meters**.



Farm Bunding work observed in Tondale village

Desilting



Desilting work observed in Jadhawvadi village



Desilting work observed in Kasarwadi village

- To restore the channel's capacity, desilting work was carried out in MRM initiative by removing silt and sediment accumulations.
- Desilting projects enhanced the water reservoir's hydraulic efficiency. During the field visits conducted by Deloitte team in September, which is a dry patch this year, the water was still visible in these structures.
- A total of **205,339 cubic meters of area** was desilted during 2018-22 period. Desilting activity was carried out in 16 villages impacting 589 direct beneficiaries.

Tree plantation activity

- The goal of the tree planting campaign was to increase the amount of green space, lower air pollution, and increase the positive effect of biodiversity.
- While tree plantation drives provided an immediate positive impact, their true significance lies in the long-term benefits that they generate. These trees planted today will continue to grow, providing shade, improving air quality, and supporting biodiversity for years to come.
- Under MRM project, a total of **7,910 trees** were planted covering an area of 37 Acres. Tree plantation activities were carried out in 5 villages: **Bijwadi, Mohi, Jadhavwadi, Vadgaon and Wavarhire.**

Village	Trees planted	Area covered under tree plantation (Acres)
Bijwadi	2,500	9.88
Mohi	710	4.94
Jadhavwadi	1,200	4.94
Vadgaon	1,500	4.94
Wavarhire	2,000	12.35

 7,910 trees planted

 37 Acres of area covered under tree plantation

- The tree plantation activity in Jadhavwadi was carried out on a gram panchayat land of around 5 acres. 6-7 local variety of plants like *peepal*, *neem*, custard apple, *jamun* etc. were planted. Another remarkable aspect observed was convergence with other projects. For irrigation, drip irrigation system was installed with the help of funds from a different donor.
- The survival rate of these trees planted across 5 villages was reported to be around 80-85 percent by IPs, which itself is a key achievement in these arid, water scarce regions.
- By integrating tree plantation activities as part of CSR commitment and enhancing employee and community engagement, Cummins MRM project is a step forward in making a lasting and tangible contribution to environmental sustainability and community well-being.



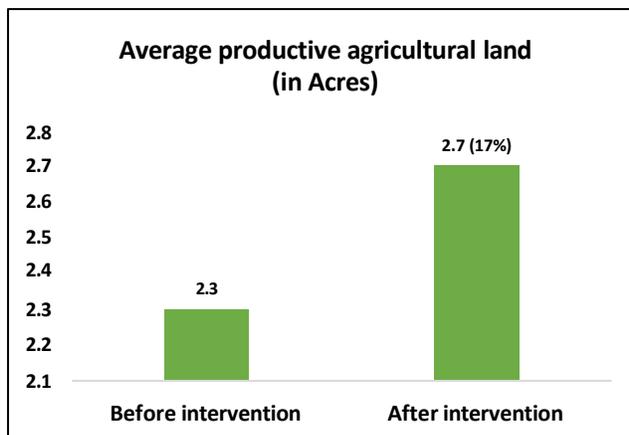
Tree plantation in Bijwadi and Jadhavwadi

5.3. Farm-based Impact

Enhanced Agricultural Productivity

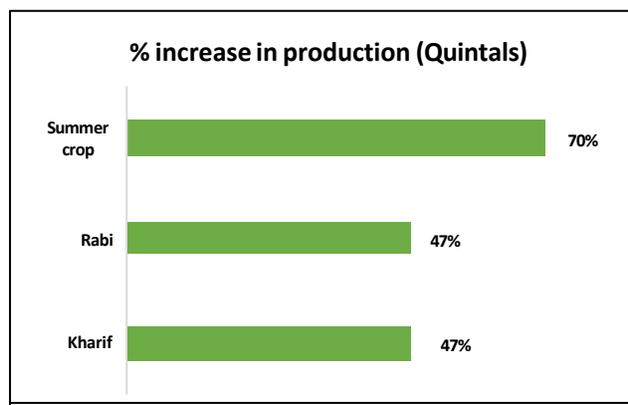
Increased productive land

- **All beneficiaries** interacted with on a sample basis confirmed increase in productivity of agricultural land post intervention.
- **More than 60%** of the beneficiaries reported that due to the creation of watershed structures, the proportion of wasteland has reduced leading to availability of more fertile land for crop farming.
- As per the survey, there has been an **increase of 17%** in productive agricultural land available to farmers.



Increased cropping cycles

- **100% beneficiaries** confirmed reduced dependence on water tankers.
- Beneficiaries also confirmed cultivating an **additional summer crop** due to availability of water in village waterbodies such as wells and borewells and adopting water crises mitigation practices.
- Beneficiaries during interactions confirmed increase in production of crops across both kharif and rabi seasons.
- As recorded by the beneficiaries, the quantum of increase in production of kharif and rabi is in equal proportion. However, the cultivation of **summer crop has increased by 70%** which was possible post project implementation.



Types of crops produced

- Major crops produced across rabi and kharif seasons are **jowar (sorghum), bajra (pearl millet), makka (corn), moong** and **vatana (green peas)**.
- **30% beneficiaries** interacted with on a sample basis confirmed producing additional crops specially cash crops such as **sugarcane, onion, mango, and pomegranate**.
- 90% beneficiaries confirmed participation in creation of **water budget** for the village.

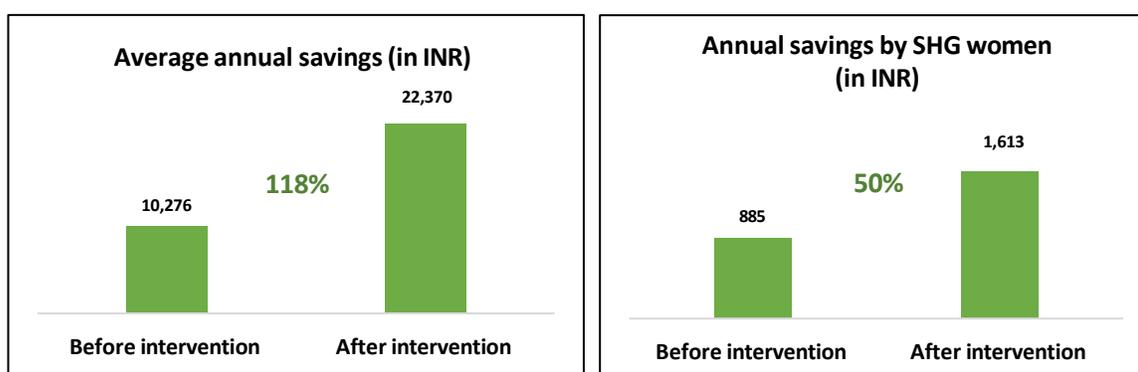
Improved Income Levels

- **All beneficiaries** interacted with on a sample basis confirmed receiving training on in-house production of organic fertilizers/pesticides and awareness of modern techniques to be adopted for reducing production cost.

- They shared that these practices have augmented climate-resilient agriculture, streamlined farming processes, reduced labor-intensive efforts, and significantly enhanced overall agricultural productivity.
- **More than half** of sample beneficiaries confirmed that due to increased agricultural production there has been availability of additional produce for sale leading to increase in their income.

Alternate techniques leading to increase in income

- **40% sample beneficiaries** interacted with on a sample basis confirmed adopting water conservation practices such as water budgeting and drip irrigation thereby saving on expenses incurred during farming.
- **100% sample beneficiaries** confirmed their families receiving four fruit crop plants. Mango, Custard Apple, Coconut and Peru were the plants provided to be grown in their kitchen garden. Beneficiaries shared growing these plants at home thus reducing dependence of purchase of nutritious fruits from the market.

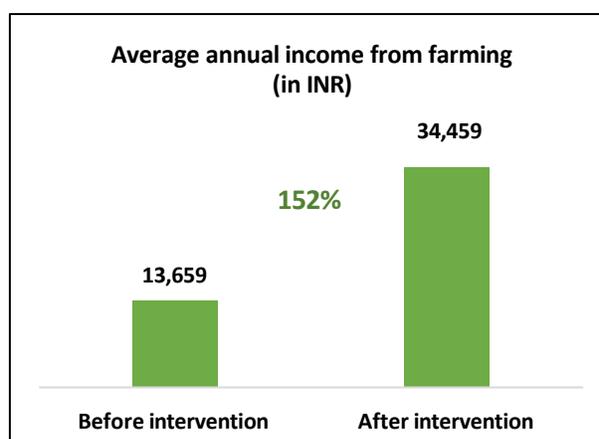


Increase in annual savings

- During assessment interaction, as reported by the sample beneficiaries, there has been an average **increase in their annual savings by 118% after implementation of the project.**
- Women beneficiaries from Shevari and Mograle villages reported a **50% increase in their SHG savings after project implementation** while in other villages the proportion of savings continues to be same as before.

Availability of low-cost production techniques

- **All beneficiaries** confirmed adoption of low-cost mechanization practices by successful introduction of modern and proven agricultural technologies.
- **100% farmer beneficiaries** during assessment interaction shared being unaware of the innovative practices of silage production, azolla fodder, and vermicompost techniques before implementation of the project.
- Small and marginal farmer beneficiaries during assessment interactions confirmed availability of mini tractors through custom hiring centre for small and marginal farmers. They also



confirmed hiring machines and equipment at villages at cheaper rate than market thus having an average saving of **INR 300 per day**.

- Farmers reported an average **increase of 152%** in their annual income from farming.

Access to organic farming practice

- **100% women beneficiaries** interacted with on a sample basis confirmed implementation of organic farming practices.
- **Vermicomposting, S9 culture, Jivamrut, Amrut pani, use of Gaumutra, Goat and poultry manure, Neem ark** are some of the organic farming practices adopted as reported by the beneficiaries.
- **70% beneficiaries** during sample interaction confirmed implementing organic farm practices and making fertilizers at home such as *Jeevamrit* and *Amrut pani* thus saving on money spent on purchase of chemical pesticides.
- **30% beneficiaries** interacted with on a sample basis recorded implementation of micro-irrigation systems in their farmland such has drippers, sprinklers, and hydroponics technology after receiving information and training under the project.



Jivamrut in Kasarwadi village



Vermicompost bed in Ukirde village

5.4. Non-farm based impact

Access to alternative livelihood opportunities

- **50% of farmers** interacted with on a sample basis confirmed facing issues of fodder scarcity and thus opting for purchase form the market at a higher price which led to an increase in the cost of milk production.
- **10% famers also reported** being further financially burdened due to death of their diseased livestock.



Goat beneficiary at Kasarwadi village

Increased livestock adoption

- **80% beneficiaries** interacted with confirmed receiving livestock support under the project.
- One goat and 25 chickens including supplementary poultry set-up were given under livestock support as shared by the beneficiaries during the interaction.

- **All supported beneficiaries** confirmed that they contributed 25% of the livestock purchase cost while 75% was covered under the project.

Access to insurance for livestock and goat manger

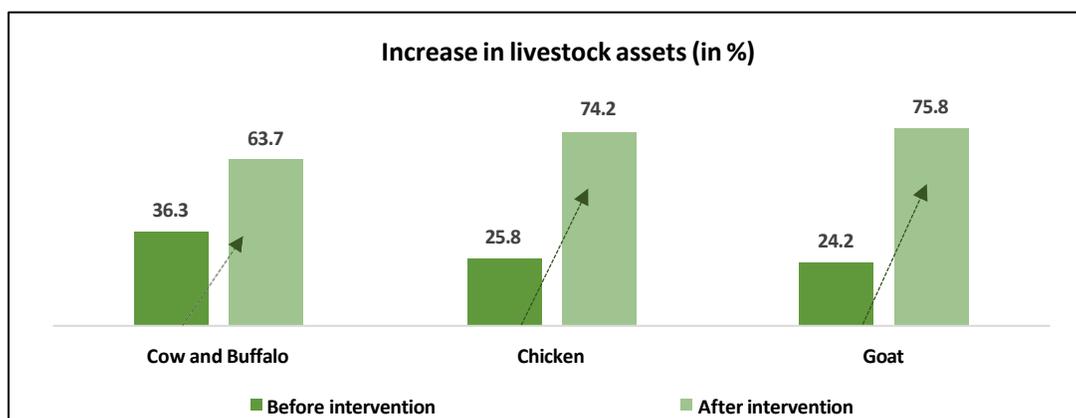
- **100% livestock support beneficiaries** confirmed that the goats received were insured.
- **40% beneficiaries** recorded self-renewing the insurance of their supported goats with the support of the implementing team.
- **40% sample beneficiaries** during interaction confirmed receiving goat manger under the project.
- **Half of the supported beneficiaries** interacted with on a sample basis shared that the goat mangers helped them in keeping the food of goat and sheep off the ground and helped beneficiaries to avoid wastage and minimize the infection rate in goats.

Access to vaccination and health check-up camps

- **70% beneficiaries** confirmed that vaccination camps were conducted which led to reduction in livestock related diseases.
- **20% of the beneficiaries** also recorded that health checkup camps were arranged for goats providing them information on early detection of symptoms of multiple diseases and how to provide medication to them.

Increase in livestock ownership

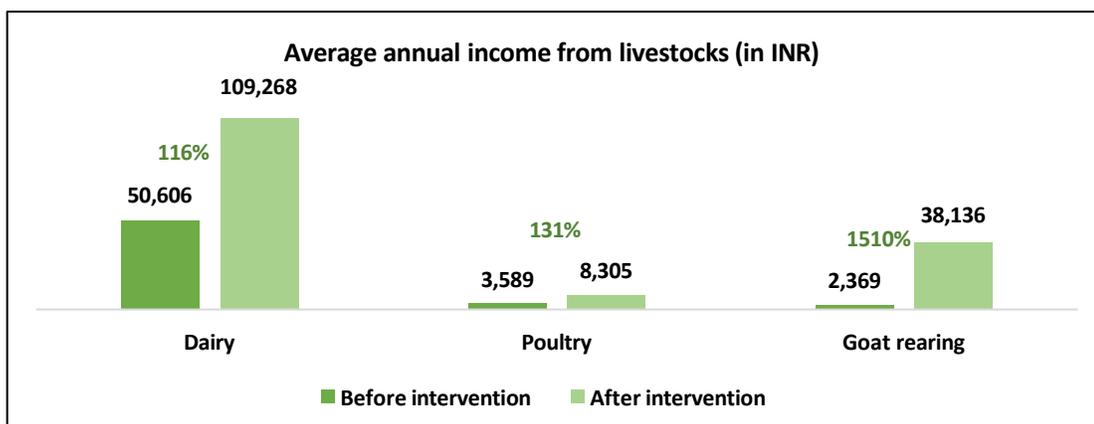
- During assessment interaction, beneficiaries across sample villages confirmed buying additional livestock with the enhanced income thereby leading to increase in assets owned.
- **28% increase** in cow and buffalo as assets have been reported while around **50% increase** is confirmed in ownership of goat and chicken.



Additional income generated through non-farm-based interventions

- **All beneficiaries** interacted with on a sample basis confirmed increase in income after adoption of alternate livelihood opportunity
- **More than half of the women beneficiaries** confirmed starting a mini dairy business after receiving the livestock support and capacity building training under the project
- **20% of the sample beneficiaries** confirmed having an annual average saving of **INR 10,000-15,000** after generating income from livestock support
- **70% beneficiaries** interacted with on a sample basis confirmed that because of the livestock support they started selling the milk and eggs thereby increasing their income levels

- Beneficiaries shared that on an average, each cow produced **14 litres/day** of which **10 litres** were sold daily at a rate of **INR 30-40/litre** while each chicken delivered **170 eggs** per year. Leaving some for self-consumption, remaining eggs were sold in the market on an average rate of **INR 7-10/ egg**.
- Few of the beneficiaries also earned additional income selling the goats at **INR 6,000-10,000**.
- From the survey, it was evident that there is an **average annual increase in income of 116% in dairy, 131% in poultry and 1,510% in goat rearing** after the livestock interventions of MRM.



Capacity building on alternate livelihood

- **80% beneficiaries** interacted on sample basis confirmed receiving capacity building trainings.
- Beneficiaries shared that the training was a comprehensive two-day programme and focused on critical aspects of dairy and poultry farming, including cow rearing, cowshed management, feed and fodder management, recognizing disease symptoms and implementing ayurvedic remedies and hygienic milking practices.
- **50% of the sample women beneficiaries** confirmed attending **livestock trainings**.
- Beneficiaries confirmed receiving reading material in Marathi which helped them better understand the low-cost practices and other information provided at the training.
- Women beneficiaries shared that various low-cost livestock rearing practices were taught during the training such as Mukta Gotha, sticking calcium bars to trees near the animals, making ayurvedic medicines to help treating animal infections, etc.
- **As reported in the project annual reports by project team, 358 women farmers have adopted this technique across 40 villages.**



Nutritional supplements for livestock in Tondale village

5.5. Impact rating

The MRM project has yielded significant positive outcomes in the villages it targeted. Nevertheless, it is important to note that the various on-ground activities exhibited diverse levels of acceptance and implementation. Consequently, Deloitte has conducted a thorough qualitative assessment, considering direct observations and interactions with beneficiaries. The resulting categorization of interventions, both on the supply and demand sides, reflects the varying degrees of adoption by beneficiaries, classified as Low, Medium, or High. This classification is grounded in a comprehensive understanding of the qualitative nuances observed during the impact assessment study.

Supply Side Interventions

Hydrogeological study, construction of gabion structure, creation of deep CCT and CCTs., undertaking desilting activity, implementation of farm bunding, implemented on the grounds of watershed development witnessed high level of adoption. This is complimented by the increase in water levels due to different water sources. The tree plantation activity carried out in villages is also rated as high adoption level, because of the 80-85% survival rate of the trees observed on ground. 7,910 trees were planted in 5 villages, covering 37 acres, contributing to environmental sustainability.

High

Demand Side Activities	Scale		
	HIGH	MED	LOW
1 Adoption of organic farming Implemented in 40 villages/ adopted to avoid using synesthetic farm inputs such as fertilizers and pesticides	○		
2 Fruit Crop cultivation Implemented in 40 villages	○		
3 Silage making technology Implemented in 40 villages / Silage bags are a solution that is effective in preserving animal feed, flexible for storage and reduces costs	○		
4 Smokeless Chulah Implemented in 30 villages / stoves are more fuel efficient than the conventional stoves with fuel efficiency up to 35-40%.	○		
5 Livestock adoption Implemented in 40 villages/ To facilitate an alternate source of income	○		
6 Mukta Gota rearing Implemented in 20 villages/ allows animals to roam freely and not be tied up	○		
7 Cattle Feed Units supported 2 units/ to support SHG women for entrepreneurship	○		
8 Cycle Hoe Implemented in 8 villages/ A technique for weeding/ The blade in the rear part uproots weeds by penetrating the soil		○	
9 Azolla fodder Implemented in 40 villages / fodder to feed animals and it increases feed efficiency, average daily gain of animals, and milk production by 15–20%.		○	
10 Vermicompost Unit Implemented in 40 villages/ boosts the nutrients available to plants and enhances soil structure and drainage.		○	
11 Hydroponics technology Implemented in 40 villages / Hydroponics is the technique of growing plants using a water-based nutrient solution rather than soil			○

Note: The relative business impact for the above dimensions are illustrative and dependent on client specific business scenario

Pivot during COVID-19

Since MRM project was an extensive community engagement project, it was important to follow the social distance norms. The beneficiaries belonged from a marginalized background and hence awareness was important in the community. Hence, the project immediately needed to pivot and cater to the needs of the community. Within its sphere of influence, Cummins and the three implementation partners came together to implement the change on-ground.

Cummins through MRM project extended the appeal for relief support through implementation partners.

- Organized villages in clusters and conducted meetings in small groups of 10-12
- Awareness generation on preventive health care measure for COVID-19
- Distribution of dry ration kits and COVID-19 protection kits that included masks and sanitizers
- Digital adaptations by implementing partners to tackle COVID-19

Different adaptations were needed at various levels in the post-COVID-19 world to adjust to the new normal. Therefore, a

need for digital communication was essential by leveraging use of technology to its full potential. All the implementing partners started digital/virtual communications with beneficiaries.



COVID-19 awareness sessions conducted



Distribution of COVID-19 essentials



Beneficiaries following COVID-19 protocol



ADOPTION OF BEST PRACTICES

6. Adoption of best practices

Revolutionizing Livestock Farming: The Silage Solution

Pre intervention situation- Before the intervention, the local community juggled their livelihoods between farming and tending to livestock. However, the absence of a reliable green fodder source posed a significant challenge. The project team recognized the urgent need for a sustainable solution. During the kharif season, crops like Bajra and green grams dominated the landscape, but Bajra was unsuitable as fodder due to its short shelf life. In the rabi season, Sorghum was a potential option, but its cultivation depended on irrigation, making it economically unfeasible for many farmers. This led to a heavy reliance on external sources for green fodder, resulting in additional costs.

Intervention- Cummins under the Livestock development, began an initiative in 2019-20, that helped the beneficiaries with an alternative and sustainable way of producing fodder for animals. A dairy development training programme was initiated. Women from Bijawadi and Sokasan villages were provided the opportunity to visit Govind Dairy Pvt Ltd in Phaltan. Here, they gained the knowledge and skills required for silage preparation, unlocking a realm of possibilities for dairy farming. As a result, 159 women from these villages acquired the expertise in silage production, with an initial 33 women farmers adopting this innovative technology. They produced an impressive 63 metric tons of silage using maize leaves and culms. Presently, 139 out of the 159 dairy women farmers in these villages actively engage in silage production, yielding an annual production of 1,017 Metric Tons of silage.

Impact- In the last four years, a total of 2,500 women dairy farmers from 49 villages received training, with 1,832 of them embracing silage production using maize fodder. The cumulative annual silage production across these villages now exceeds 5,000 Metric Tons, with an estimated value of INR 250 Lakhs at a rate of INR 5 per kilogram. Recognizing limited shelf life of silage bags, forward-thinking farmers have initiated the construction of silo pits to ensure a lifelong supply of silage. This remarkable transformation is a testament to the potential for positive change in the lives of farmers and the community.



Silage adoption in MRM villages

Empowering Women: A Journey of Sustainable Cattle Feed Production

Pre intervention situation - In dairy business cattle feed is most important feed item to maintain the fat and SNF percentage in milk, because the rate of milk is directly proportional to fat and SNF content of milk. The cost of cattle feed is increasing day by day due to cost of raw material. Women had to buy the cattle feed from outside and hence that increased the overall expense of households per month. There was an urgent need of reducing the cost of cattle feed

Intervention- In the village of Jashi, a group of ten determined women set out on a mission to uplift their lives. On December 27, 2020, they formed a Self-Help Group (SHG), inspired by the success stories of SHGs in neighbouring villages. They were eager to find a way to augment their income and improve their livelihoods. However, they were grappling with the financial burden of procuring cattle feed, a necessity for their livelihoods. It was at this juncture that Cummins and the SHG joined forces, sharing a common vision – the establishment of a cattle feed production unit. The journey began with the inception of this unit in 2021-22, but it was not without its trials and tribulations. An initial attempt by another village SHG proved unsustainable, leading to a courageous decision to transfer responsibility to the Shreeganesh Samuha. This group possessed both the necessary resources and unwavering determination. To ensure the women's success, AFARM organized exposure visits to neighbouring villages with established cattle feed units, providing invaluable guidance to the women

Impact- With resolute commitment, the SHG procured essential machinery, including a hammer mill, mixer, pellet mill, weighing machine, and bag sealing machine. They sought insights from veterinary experts on formulating nutritious animal feed and established connections with nearby villages to secure raw materials and guidance. To address technical issues arising from voltage fluctuations, the SHG independently invested in a three-phase machine, funded by an MSME loan with a 6.10% interest rate, a loan they impressively repaid in just ten months. This transformative journey has not only boosted the women's confidence and status within their families but has also turned them into role models for other SHGs in nearby villages. The establishment of a cattle feed unit in a village holds immense significance. It not only provides a cost-effective solution for villagers to access nutritious animal feed but also offers a consistent supply of affordable cattle feed, rendering livestock rearing more sustainable



Cattle feed unit operated by SHG women at Jashi

Transforming Agriculture: Travis and Cycle Hoe Revolution

Pre-intervention- One of the major sources of income for farmers is livestock (Cow and Buffalo rearing for milk production, Goatery for meat production). More than 60% families were depending upon dairy farming. However, a critical tool was missing – the Travis. The farmers recognized its significance during focused group discussions, as Travis played a vital role in delivering essential services like vaccinations, injections, artificial insemination, and medical treatments to the animals. Without Travis, handling these large animals was often challenging and potentially hazardous for both the animals and their caregivers. Additionally, labour is a crucial element in agriculture, yet there's a shortage of agricultural workers, even in our project area. Weeding is a vital task in crop cultivation, with seasonal crops requiring at least two rounds of weeding and perennial crops needing 4 to 5. Labour needs are directly linked to the number of weeding operations and the crop's area. To address this labour shortage, the Cycle Hoe, a low-cost mechanized tool, has become popular in the farming community

Intervention- The situation was put to light by AFARM. Recognizing the urgent need, they liaised with the local Government Veterinary Department and garnered support for Travis installation across 14 villages. With the government's design in hand, local fabricators were engaged through competitive bidding. One fabricator was selected, and an agreement was reached to manufacture and install Travis units in all the villages. Beneficiaries from Vadgaon mentioned that travis has been useful for the village and is now a common sight in Vadgaon village, providing safe and efficient care to approximately 700-800 cattle from 50-60 households. AFARM's investment of around INR 22,000 per Travis has made a world of difference for these dairy farmers. Cummins also demonstrated the cycle hoe technique, and the results were astounding – in just four hours, one person could weed an entire acre, replacing the need for eight labour-intensive days and saving INR 1600 per weeding. Over 100 farmers in 8 villages eagerly adopted this transformative technology

Impact- Total 113 farmers have adopted cycle hoe technology. The cycle hoe was promoted in 8 villages and travis was installed in total 14 villages. These techniques have not only simplified the lives of farmers but have also ensured increased productivity and efficiency. Through Cummins initiatives, these villages are now better equipped to meet the evolving demands of agriculture and animal care, paving the way for a stable livelihood



Cycle hoe beneficiary



Travis installed at Vadgaon

Setting up of Custom Hiring Centre

Pre-intervention- Earlier all agricultural activities were done by Bullock drawn implements. At that time farmers did not have to pay for tillage operation. Over the years, with technology taking its speed, tractors were introduced, and tractors require diesel and fuel. The cost of tillage operations is directly proportional to rate of fuel. However, it is expensive to own a tractor and spend on its maintenance

Intervention- Custom Hiring Centre was implemented under the MRM project with the objective of reducing the cost of tillage operation in project village. At the centre a farmer can take on hiring essential farming equipment such as tractors, ploughing and sowing machine at a rate lower than the market. Apart from these, mini tractors which are required for small acre of land are also not easily accessible in the market which are available at the custom hiring centre

Impact- The farmers during interaction shared that with mini tractor and small agricultural implements hired from the centre, they reduced expenses on tillage operations due to less consumption of fuel and less maintenance cost. They shared that to cultivate 1 acre of Bajara crop, the cost of cultivation is INR 8000 and out of that 50 % expenses are incurred on preparatory tillage, sowing and harrowing. Farmers shared that from the market hiring a mini tractor would cost around INR 1500 per day while at the centre they can hire it for INR 1000-1200 per day thus saving on an average of INR 300



Custom Hiring Centre, Mograle

Adoption of Azolla Fodder and Vermicompost Method

Pre-intervention- In the rural landscapes of Maharashtra, farmers grappled with the challenge of sustaining livestock and enhancing soil health. They were unacquainted with innovative techniques like Azolla fodder and vermicomposting, essential practices for improving their livelihoods and agricultural output. These methods were introduced to women farmers to empower them and drive change in their communities

Intervention- Azolla fodder, a green algae water plant grown in small quantities of water in partial shade, emerged as a transformative solution. Abundant in proteins and vitamins, it provided a nutritious feed for livestock animals, offered fresh or in dried forms. Through the intervention, women like Reshma, with her 20 goats and 25 chickens, adopted this technique. She successfully produced 2 beds, totalling 3 kgs per day, with azolla containing 25% protein. This enriched feed led to healthier livestock, reduced disease occurrence, and economic benefits for Reshma and her community. According to the project's annual report, an average of 22.25 kg of azolla was produced monthly per family, with 100% of families reporting a reduction in animal diseases. A total of 208 women farmers embraced the practice, resulting in enhanced animal health and nutrition.



Beneficiary with azolla bed

The second impactful practice introduced was vermicomposting. Extensive awareness campaigns and farmer

training sessions encouraged the adoption of organic inputs. A total of 623 farmers, predominantly women, harnessed vermicomposting under project support. Each farmer received a 12x4x2 feet tarpaulin bed along with 2 kg of earthworms. Vermicomposting improved soil health, enhanced soil organism populations, and increased nutrient availability for plant growth. Farmers like Gorakhnath Kadam, aged 62, thrived through the vermicomposting approach. His dedication led to impressive results, with an annual production of one tonne of vermicompost, resulting in substantial profits. He took a holistic approach to farming, making efficient use of resources, reducing costs, and achieving healthier produce. He harnessed vermi-wash for irrigation, providing savings and better crop quality. By embracing chemical-free insecticides and natural supplements, he not only preserved soil fertility but also offered consumers an eco-friendly, chemical-free agricultural experience

Impact- The adoption of Azolla fodder and vermicomposting techniques proved to be a turning point for farmers in Maharashtra. Livestock health improved, diseases decreased, and agricultural yields grew. These practices not only empowered women farmers but also ushered in sustainable, eco-friendly agriculture, fostering healthier, cost-effective, and thriving rural communities

Smokeless Chulah: - Igniting Change in Rural Kitchen's

Pre-intervention- In rural areas, women's activities invariably revolve around the kitchen stove. They usually cook food inside their houses using the traditional chulah which causes the emission of smoke. It causes health impact as there is no proper ventilation and thus people started placing the chulah outside their house to cook their food. Cooking on an open fire can cause increased health problems brought on from the smoke, particularly lung and eye ailments, but also birth defects. Smokeless chulah which is the modern chulah or stove is a cooking stove mainly used in the village area that can be made with locally available material like cow dung, clay, soil, chimney pipe and net iron plat. Smokeless household stoves are more fuel efficient than the conventional stoves with fuel efficiency up to 35-40%

Intervention- Cummins, provided Smokeless Chula's to XX beneficiaries after having done a baseline assessment of the families who needed the most. One such beneficiary, named Sarabai shared that she had received the Smokeless Chulah, and she has been experiencing various benefits from it. She mentioned: - "Earlier I used to cook in open chulah with very limited efficiency which took much of my precious time, and I was not able to focus on my children and family; due to this, my daily household work was suffering. I developed many health issues such as breathing problem, children were not able to study, the dirty smoke remained inside the house". She stated that after using smokeless chulah "I never imagined my life beyond the kitchen and smoke"

Impact- Beneficiaries can now cook with less firewood with less smoke. And it is also very handy to operate, it is environment-friendly, it reduces deforestation, increases forest biomass. It helped them to stand on their own feet and made them self-reliable



Sarabai, smokeless chulah beneficiary



CASE STUDIES

7. Case Studies

Back to home: Siddhesh's Journey with Monsoon Resilient Maharashtra

Meet Siddhesh, a resilient individual whose life took a transformative turn, because of the "Monsoon Resilient Maharashtra" project. In 2018, Siddhesh found himself at a crossroads, having left his job in Mumbai to care for his ailing father and manage the family's agricultural land in the hillside village. The village, facing chronic water scarcity, had long grappled with the challenge of sustaining crops throughout the year.

Post intervention, a positive shift began. The impact on groundwater levels was a game-changer for Siddhesh and his community. The once-elusive drinking water problem was mitigated, bringing relief to the villagers. While challenges persisted during April to May for agriculture, Cummins' initiatives marked a significant improvement. What was once a two-crop harvest per year transformed into a three-crop cycle, substantially boosting Siddhesh's annual income.

He further mentioned that his productive agriculture land increased from 1 acre to 1.5 acre

after the intervention year of Cummins. He also has 4 goats and 1 cow, as a part of his livestock rearing. He emphasized that though there is less rain this year, but still there is no scarcity of water for drinking or irrigation till now. His major source of irrigation is borewell and he produces mainly Jowar, Bajra, Maize, moong, onion, and gram on his agricultural lands

Although exact figures cannot be showcased, due to substantial self-consumption, he estimates a noteworthy addition of INR 20,000-30,000 annually from the third crop, mainly cash crops produced during that period. A key catalyst for this agricultural success was his participation in the Farm Field School and his adoption of drip irrigation techniques, covering approximately one acre of his land.

Siddhesh acknowledges the positive impact on his life and livelihood. His story underscores the tangible benefits of the project, emphasizing the need for its continuation. With a hopeful gaze towards the future, he envisions further transformative work in his village, recognizing that more initiatives are required to address the multifaceted challenges faced by his community.



Siddhesh, farmer beneficiary, Khutbav village

Alka Sawant: Pashusakhi, Mograle Village

Meet Alka Sawant, a passionate Pashusakhi, and a proud beneficiary of Cummins' visionary intervention. For Alka, the journey of empowerment began with the AFARM training programme. In just two years, her knowledge and skills have soared to new heights, enabling her to play a pivotal role in her community.

Alka's role is not just about personal growth; it's about spreading the light. She trains and mobilizes other women, passing on the invaluable knowledge she has gained. A five-day training course opened doors to the world of silage production, poultry management, and livestock medicine. Alka conducts monthly meetings, bringing women together to share progress and address challenges, meticulously recording every discussion in a dedicated book. Cummins' initiative has not only enriched Alka's life but also ignited a spark of transformation among the women in her village.

Poultry, dairy, and Azolla fodder were once mysteries, but now, thanks to AFARM's training, they are well-versed in these essential aspects of farming. Alka's role extends beyond livestock care; she takes charge of animal vaccinations and teaches women the art of selling vegetables at auctions. The results are impressive, with participants doubling their profits in the market.



Alka Sawant, Pashusakhi, Mograle village

The impact of Cummins' initiative extends beyond agriculture. The introduction of AOL (Art of Living) trainings in yoga, meditation, and mental health has revolutionized health and well-being in the village. Villagers now breathe easier, fall sick less often, and feel refreshed. Cummins' programme has also sowed the seeds of unity and harmony. The community now rallies together to solve problems, and conflicts have given way to collaboration. Cummins has not just transformed lives; it has fostered a sense of togetherness and teamwork. In Cummins' Monsoon Resilient Maharashtra initiative, Alka Sawant's story is but one shining example of the positive impact that Corporate Social Responsibility can have on communities. Cummins, together with Deloitte, continues to uplift and empower, forging a brighter future for Maharashtra's villages. The journey of transformation continues, one heart-warming story at a time.



Rohit Shinde, Agricultural Officer

The Agricultural officer played a pivotal role in promoting sustainable agricultural practices, with a key objective of introducing low-cost techniques that improve soil quality. These techniques centred on organic fertilizers and pesticides, with a focus on educating farmers about their benefits and applications. To achieve soil improvement, the officer introduced several organic farming techniques, including Amrut Pani, Jeev Amrut, Vermicompost, Dashparni Ark, Nimark, and Lamit Ark. These techniques aimed at not only enhancing soil fertility but also reducing the use of harmful chemicals in agriculture.

A distinctive feature of the MRM project was the practical demonstration of these techniques on farmers' lands. Crop demonstrations occurred in stages, with batches of 25 farmers at a time. This comprehensive training programme covered pre-sampling preparation, fertilizer training, water management, pesticide management, and post-harvest technology. Farmers were encouraged to implement these learnings on their own fields. The project didn't stop at training; it further encouraged interested farmers to participate in a two-day training programme and become

a part of the Farmers Producer Group. Through these groups, farmers established connections with the

Agricultural Department and obtained certifications, while some of them (around 10-15) accessed government schemes linked to Farmer Producer Organizations (FPOs).

Under the Waste Land Development initiative, Micro Drip and Vermicompost training played a crucial role in preparing a beneficiary list. This list was then shared with Gram Panchayats for verification, ensuring that training reached those who needed it the most. The MRM project also extended its support to women beneficiaries, equipping them with the knowledge and resources to generate additional income. Women were provided with Seed Capital Support worth INR 10,000 as well as two Vermicompost beds and barrels. These investments helped women save and manage their earnings through Self-Help Group (SHG) accounts, fostering financial independence.

Mahadev Arghode, 65 years- Key Resource Person, in Cummins' Monsoon Resilient Maharashtra Project

Mahadev Arghode, a dedicated Key Resource Person (KRP) is involved in the transformation of Man taluka, Satara. His multifaceted efforts in mobilizing the community and championing organic farming have yielded remarkable results. Mahadev Arghode's journey in village development began in 2016 when he served as a Sarpanch. His commitment to rural development led him to work with the Water Foundation before he joined Cummins. His pivotal role in the MRM project reflects his unwavering dedication to creating a positive impact in the community.

One of Mahadev's key areas of focus was to motivate and mobilize the community towards adopting organic farming practices. His involvement with Deep CCT work played a crucial role in this endeavor. Cummins' support in waste land development enabled numerous farmers to reclaim and cultivate new land, significantly expanding their farming opportunities. Cummins' intervention empowered women in the community with essential livestock techniques, enabling them to earn additional income beyond farming. Prior to the intervention, women would rely on animal doctors when their livestock fell ill. Post-intervention, they gained the knowledge and skills to treat their animals themselves, resulting in cost savings. The introduction of Silage Bags enabled them to produce high-quality animal feed, ensuring a steady food supply throughout the year. Mahadev recognizes the broader impact of the MRM project on the overall well-being of the villagers. Through AOL training sessions, the community members learned about the interconnectedness of different body parts and their role in mental and physical health. Mahadev personally underwent the Happiness training, finding it highly beneficial. His positive experience motivated others to participate, contributing to the community's overall well-being. Mahadev Arghode was actively involved in ACWADAM's work on water levels. He conducted well surveys and trained Krushidhooth (agricultural ambassadors) to enhance water management in the community. Additionally, he played a crucial role in raising awareness about tree plantation activities, fostering a more environmentally conscious community.

The cumulative efforts of Mahadev Arghode and the MRM project have led to significant positive changes in the community. Agricultural practices have seen marked improvements, while conflicts at the community level are resolved more efficiently. Increased income sources, cost reduction through better techniques and knowledge. Despite being 65 years old, Mahadev Arghode remains dedicated and enthusiastic about his work. His daily commitment to village development serves as a source of inspiration and motivation for the entire community.



Mahadev Arghode, KRP

Village Development Committee of Ukirde village- Guardians of community transformation

In the year 2022-23, Ukirde village saw the establishment of its Village Development Committee (VDC), a dedicated team consisting of seven members, including three males, three females, and one Krushidut. Among the male members, one is the respected GP Sarpanch, another an ex-Sarpanch, and the third, a watershed expert. The female members comprise a single woman, a widow or landless individual, and one who owns less than 2.5 acres of land. This diverse assembly of committed individuals plays a pivotal role in the community's transformation.

The responsibilities undertaken by the VDC members are far-reaching and vital. Their roles include supporting AFARM and IAHV in beneficiary selection processes, motivating beneficiaries to contribute 25% of the activity cost, ensuring the efficient implementation of programme activities, and closely monitoring the ongoing work under the project. In addition to these crucial tasks, the VDC serves as a bridge between the community and project team, providing information and regular updates. They conduct quarterly meetings to keep the project team informed about the project's progress.

The VDC of Ukirde has proven to be a guardian of the village, responsible for the smooth execution of various demand-side and supply-side activities. Their commitment to conflict resolution and sensitization on project activities ensures the harmony and effective realization of community development goals. As the driving force behind transformation, the VDC ensure that there is continuous progress and empowerment, reinforcing the profound impact that collective efforts can achieve within a community



Village Development Committee members of Ukirde village

QUOTES FROM THE FIELD

"Dependence on tanker for drinking water has reduced with the work of CCTs, Deep CCTs, desilting and farm bunding"

Farm field school has given us the opportunity and exposure to see and implement new farm technologies and irrigation techniques to increase our income from farming"

"Cummins MRM initiative has helped me in attaining financial stability"

"Silage bags is helping us in saving cost on fodder for our livestock"

"Poultry support by Cummins helped me in enhancing my annual income and allowed me to send my children in good school for better education"

"Difference of around 2 months in water availability after the watershed development activities can be seen"

"AOL training helped me in relieving stress and relaxing my mind"

"Goat rearing helped me earn money, support my family financially and having my say in family decisions"

"Cattle feed plant helped us earn money and support our family that too living in our village itself"

"Increase in agricultural crop production due to Cummins MRM initiative has led to increase in income of farmers in the village "

"The project has helped us save more in our SHG fund accounts and we are also able to repay the SHG loan"



**RECOMMENDATIONS
AND WAY FORWARD**

8. Recommendations and way forward

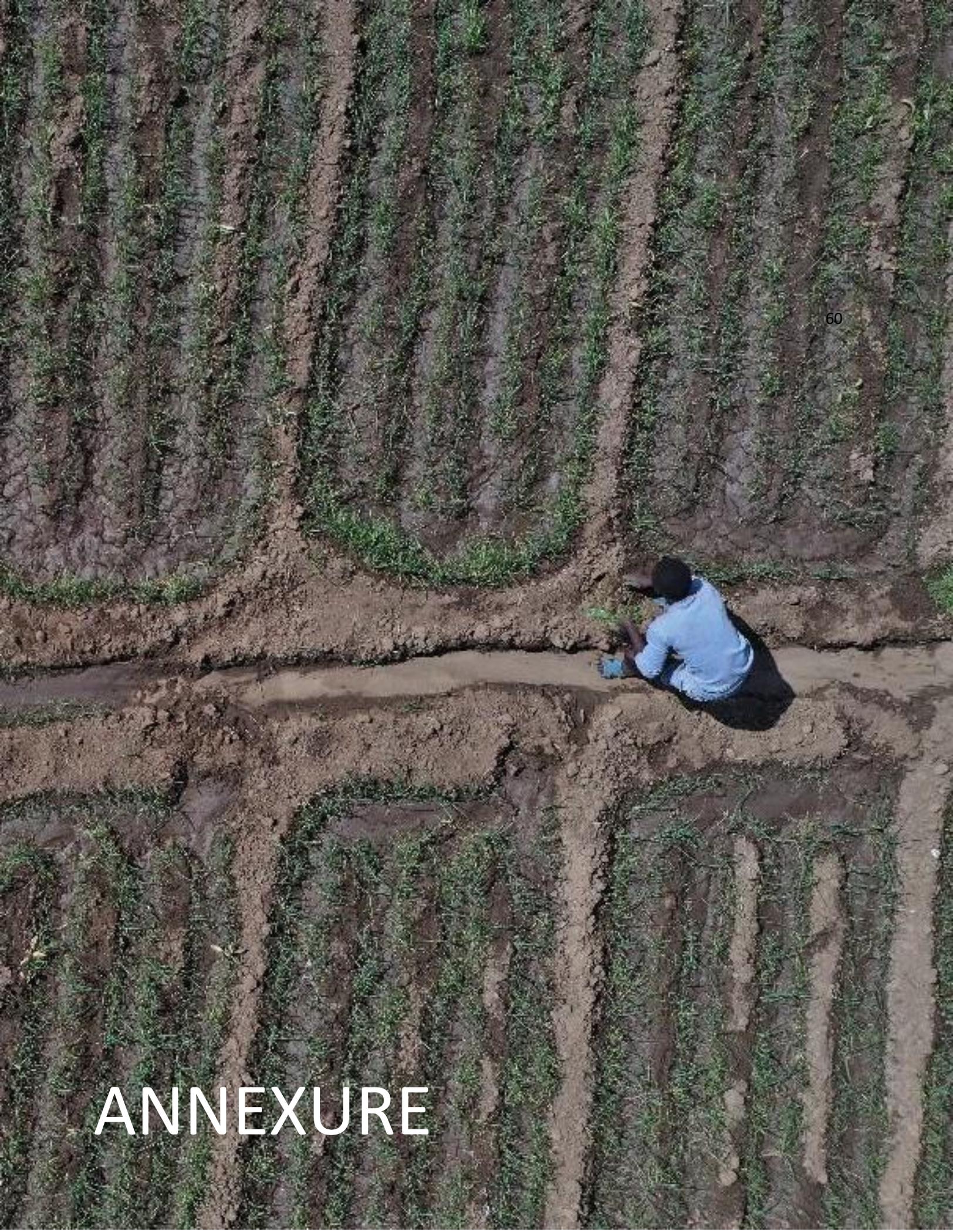
The project reviewed by Deloitte reported frameworks and systems enabling timely reporting and adherence to agreed outputs and outcomes. The assessment also outlined certain areas of opportunity to enhance the effectiveness of the grant and maximize programme impact. By implementing these suggestions, the programme can be further refined to achieve its objectives more effectively, benefiting both the community and the environment. Below are our recommendations against the identified opportunity areas:

Aspect	Observations	Recommendations
Beneficiary Documentation Enhancement	<ul style="list-style-type: none"> • IPs have been maintaining data at a household level and total beneficiary number across each activity. 	<ul style="list-style-type: none"> • IPs can maintain a comprehensive beneficiary list, categorized by village and specific activities; each beneficiary’s detailed support provided under the project can be laid out. • MIS can include KPIs such as – income levels, cropping pattern before and after interventions, savings, and expenditure pattern, etc. • <u><i>IPs have taken a note of the recommendation and evaluating to include individual beneficiary MIS from current year onwards.</i></u>
Extended Timeframe for Hydrogeological Studies	<ul style="list-style-type: none"> • In terms of project design, majority implementation activities conclude in a financial year. However, a hydrogeological cycle exists for a period of ~15 months. 	<ul style="list-style-type: none"> • All partners can be looped in the processes and activities that go beyond the project completion period in a specific village, and the learnings can be shared with all involved stakeholders.
Expansion of Watershed Development Activities	<ul style="list-style-type: none"> • Interactions were conducted with multiple groups formed in the villages during the project period. • Active presence of Water User Groups (WUG) was lacking during the field visits. 	<ul style="list-style-type: none"> • Expand watershed development initiatives in areas that have already undergone initial work leading to a broader and more sustainable impact on the environment and communities. • Strengthening the capacity of the Water User Groups (WUG) to ensure active involvement in watershed structure maintenance and expansion, if possible.

Strengthening Post- Project Monitoring	<ul style="list-style-type: none"> • During interactions, both beneficiaries and the implementing teams shared the need for a tracking system to better understand the progress of the intervention and other support requirement that might arise. 	<ul style="list-style-type: none"> • Enhance the post-project monitoring process to ensure that interventions continue to benefit the target communities effectively and will help track the long-term impact of the programme. • <i>Pashusakhi</i> and <i>Krushidut</i> can be trained and provided with template to conduct post project completion tracking.
Community Involvement in Livestock Selection	<ul style="list-style-type: none"> • Beneficiaries confirmed receiving high quality livestock through the project. • There were some reported cases of health-related issues and struggle of the livestock to survive/adjust in unfamiliar surroundings. 	<ul style="list-style-type: none"> • Discussion with the villagers to make informed decisions regarding livestock procurement; need for selecting livestock breeds that are better suited to the local climatic conditions. • Involve livestock experts to understand about suitable breeds for the area. • Second line of capacity building for Pashusakhis and Krushiduts can be conducted to assist the beneficiaries in livestock management. • <u><i>The process of identifying and procuring local breeds for the project has already been initiated.</i></u>
Diversification of Livelihood Opportunities for SHGs	<ul style="list-style-type: none"> • Most of the beneficiaries have been adopting best practices learnt during the project period for their respective farms. • Many beneficiaries reported interest in learning and exploring more livelihood enhancement opportunities. 	<ul style="list-style-type: none"> • Explore and create more livelihood and entrepreneurship opportunities for Self-Help Groups (SHGs) to empower and uplift the economic well-being of the community members leading to increased financial stability and resilience. • IP can assess the strengths and interests of the SHGs along with the area demand to provide women collective opportunities. • E.g., Azolla fodder which are produced in individual farms can be explored in the form of a women collective; farmers produce limited quantity of maize as fodder which can be further extended in the form of FPO; possibility of women initiating dairy cooperative through their livestock.
Enhancement of FPO Functioning	<ul style="list-style-type: none"> • During the field team, active FPOs were not found/reported in the intervention areas. • Implementing teams reported rising need of a Farmer Producer Organizations (FPOs) to maximize the benefits for farmers. 	<ul style="list-style-type: none"> • A well-organized and efficient FPO can provide essential support and resources to the farming community in the project area. Strengthen collaboration with existing FPOs to improve its demand and operations and plan exposure visits

		<p>to villages with an active FPO.</p> <ul style="list-style-type: none"> • With existing FPOs, linkage opportunities can be explored through strategic decisions related to product, and crops production.
<p>Streamlining Livestock Insurance Claims for Goatery Beneficiaries</p>	<ul style="list-style-type: none"> • Beneficiaries reported facing challenges in claiming the insurance for their livestock. • Some of the challenges faced include, availability of all relevant documentation, correct process of animal <i>panchnama</i>, timely renewal, etc. 	<ul style="list-style-type: none"> • Streamline the claims process to ensure that beneficiaries receive the support and protection they need. • To create an exhaustive list of various challenges faced by beneficiaries during livestock insurance claim settlement. • Consult with the expert on challenges and seek support for better documentation to ensure smooth claim settlement. • <u>Implementing teams have already collaborated with an insurance partner to ensure smooth and timely claim settlement process.</u>
<p>Set targets</p>	<ul style="list-style-type: none"> • A strong baseline study is conducted by the implementing teams on ground to understand the need of the community which helped in identifying the activities and work to be conducted in the villages. • Detailed endline study however was not available which could provide growth and impact levels observed post project implementation. 	<ul style="list-style-type: none"> • Implementation partners can consider setting targets after baseline study, to assess the improved impact during endline study. • To set strong targets for every year after the baseline study for SWOT analysis. • Target can be set for specific components – income change observed, market linkages created, multiple cropping adopted, integration of new farm technologies etc.

ANNEXURE



Images from the field



Deloitte team's interaction at Khutbav village



Deloitte team's interaction at Dhanwalewadi village



Beneficiary receiving saplings



Deloitte team's interaction at Vadgaon village



Goat beneficiary at Tondale village



Interaction with women beneficiaries



Gabion structure observed at Vadgaon village



Desilting structure observed at Vadgaon village



Medicinal plantation at Kasarwadi village



Beneficiary practicing nursery



Deloitte team's interaction at Tondale village



Deloitte team's interaction with poultry beneficiary



Mukta Gotha at Tondale village



Goat support at Shindi Budruk village



Poultry beneficiary at Jashi village



VDC Interaction at Ukirde village



Cooking with biogas at Mograle village



Interaction with villagers at Khutbav village



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