



Monitoring & Evaluation (M&E)
For Nanaji Deshmukh Krushi
Sanjeevani Prakalp
(NDKSP) in Rest of Project Area
Maharashtra

Nanaji Deshmukh Krushi Sanjeevani Prakalp
(Project of Government of Maharashtra in Partnership with the World Bank)



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LIST OF ABBREVIATIONS

AA	Agriculture Assistant
ABPS	Aadhaar Based Payment System
APMC	Agricultural Produce Market Committee
APY	Area, Production, Yield
ATMA	Agricultural Technology Management Agency
BBF	Broad Bed Furrow
CAPI	Computer Assisted Personal Interviewing
CoC	Cost of Cultivation
CCT	Continuous Contour Trenches
CHC	Custom Hiring Centers
CM	Concurrent Monitoring
DBT	Direct Benefit Transfer
DPMU	District Project Management Unit
DSAO	District Superintendent Agriculture Officer
DoA	Department of Agriculture
FGDs	Focus Group Discussions
GoM	Government of Maharashtra
GSVA	Gross State Value Added
FIG	Farmers Interest Group
FFS	Farmers' Field School
FPC	Farmer Producer Company
FPO	Farmer Producer Organization
IPM	Integrated Pest Management
K	Kharpan
KIIs	Key Informant Interviews
KVK	Krushvi Vigyan Kendra

MLP	Micro-Level Planning
MIS	Management Information system
M&E	Monitoring & Evaluation
NABCONS	NABARD Consultancy Services P Ltd.
PDO	Project Development Objective
PMU	Project Management Unit
PoCRA	Project on Climate Resilient Agriculture
RFID	Results Framework Indicators
SC	Schedule Caste
ST	Schedule Tribe
SDAO	Sub-divisional Agriculture Officer
SHG	Self Help Group
SME	Small & Medium Enterprises
S&WC	Soil & Water Conservation Structures
SWOC	Strengths, Weaknesses, Opportunities & Challenges
TAO	Taluka Agriculture Officer
ToR	Terms of Reference
VCRMC	Village Climate Resilient Management Committee
WB	World Bank

Executive Summary

Concurrent Monitoring

The Concurrent Monitoring focuses on the systematic and continuous collection and analysis of data for measuring the process and progress of the project. A total of 10 concurrent monitoring rounds are planned and are being conducted during the 5-year project period, once every six months. So far, four rounds are completed and the report submitted to PMU. This report presents the results from the fifth round.

II. Sampling Methodology

Concurrent Monitoring (CM-VII) was conducted on a sample of 32 Project and 16 Control clusters, totalling 48 clusters per round. From each selected cluster, one village was selected for the survey.

For the selected project villages, a list of individual beneficiaries, community beneficiaries, farmer field school participants, and FPC & SHGs was obtained from the PMU. The corresponding list for the control villages was obtained by the field team by visiting the villages and enquiring with concerned officials or from their records. For round CM-VII a sample of 207 beneficiaries (142 beneficiaries who received subsidy and 65 beneficiaries who received pre-sanction) were selected from the project villages by applying an appropriate sampling method for control villages.

Key Informant Interviews (KIIs) were conducted (with Krushi Tai, Agriculture and Cluster Assistants, and other senior government officials from the Department of Agriculture) in project villages to elicit responses from persons with informed perspectives. The information obtained from the key informants was the qualitative information required for the process and progress monitoring for concurrent surveys.

The sample coverage of beneficiaries in Project villages involved: 65 samples from DBT-Pre-sanction, 142 from DBT-Subsidy released, 64 Guest farmers, 32 Host farmers, 50 samples of NRM/ Community Farm Pond, 32 SHG and 65 FPO, and totalling 480.

In the case of Control Villages, functionaries like Agriculture Officer, Gram Panchayat, and Village Watershed Committee were approached and a list of individual and community activities like community farm pond and SHGs were obtained. Total of 244 beneficiaries were covered from the Control villages with a ratio of 2:1 in project and control areas.

Component A: Promoting Climate Resilient Agriculture Systems

A1: Awareness on Participatory Project & Micro Planning

Out of 415 respondents, 41.2% indicated that they were aware of village-level micro-planning on watershed management. This suggests that a significant portion of the surveyed population has knowledge about such initiatives in their village. While, 58.8% stated that they are not aware of any village-level micro-planning on watershed management. There was some awareness of village-level micro-planning on watershed management among the respondents, a larger portion of the population remains uninformed about such initiatives. The reasons behind this lack of awareness and to assess the effectiveness of these watershed management efforts in these villages. Out of 171 respondents, 56.7% stated that they have participated in the development of their village's micro-plans as part of the NDKSP project. This indicates that a significant portion of the surveyed population has been actively involved in the planning process.

Perception of the Water Budgeting Application:

The majority of respondents (89.5%) found the water budgeting application to be either very useful or useful, indicating a positive perception of its role in the micro-planning process. It means that the water budgeting application was generally well-received by the respondents and played a valuable role in the micro-planning process.

Satisfaction with Krushi Tai's Work Performance and Support:

It was observed that 74.5% rated the work performance and support from Krushi Tai as "Satisfactory," indicating that a substantial majority of the surveyed population was satisfied with the support received. This suggests that the work performance and support provided by Krushi Tai are generally well-received by the surveyed population, with a strong majority expressing satisfaction.

Visiting the PoCRA Project's YouTube Channel or Facebook Page:

As per the response from 415 respondents, 19.8% indicated that they have visited the YouTube channel or Facebook page of the PoCRA project. (80.2%) answered "No," indicating that the majority of respondents have not visited the PoCRA project's YouTube channel or Facebook page. This suggests that there is room for expanding the project's online outreach and engagement efforts, as the majority of respondents have not visited the project's YouTube channel or Facebook page.

A2: Promoting Climate Resilient Agriculture

In Project area, 91.0% have their household owns and/or cultivates agricultural land. This suggests that a significant majority of the surveyed households are engaged in agricultural activities, either through ownership or cultivation of land. While, 9.0% said that their household does not own or cultivate any agricultural land. This indicated that there was some diversity in livelihood activities beyond agriculture among the surveyed population. The average landholding was 1.42 ha in Project villages.

Ownership of Agricultural Land by Women Members:

In Project area, out of 437 beneficiaries, in 28.1% households, there are at least one women member in their household who owns agricultural land and 71.9% beneficiaries answered that there are no women members in their household who own agricultural land. This highlighted the presence of women landowners in a significant portion of the surveyed households, but there was still room for increasing gender-inclusive landownership and empowering women in land-related matters.

Availability of Irrigation Source:

In Project area, out of 321 respondents, 320 (99.7%) answered that they had a source of irrigation on the land that they cultivate. This suggests that the overwhelming majority of the surveyed respondents have access to irrigation facilities for their agricultural activities.

Cost of Cultivation

Percentage Change in Cost of Cultivation for major crops like Cotton, Soybean, Pigeonpea, Chickpea and Green Gram from CM-II to CM-VII in project villages. It was observed that the cost of cultivation for the majorly cultivated crops like; soybean and cotton the cost of cultivation has been reduced by 13.07% and 0.59% respectively. This may be attributed to the effect of interventions applied in project villages. However, the cost of cultivation for Pigeonpea, Chickpea and Greengram had been slightly increased by 3.94%, 3.82% and 2.24% respectively as compared to CM-VI.

Activities for Climate Resilient Agriculture Systems

Drip irrigation and sprinkler irrigation were the most commonly applied for or received individual benefits among the surveyed respondents, indicating a strong focus on improving irrigation practices. The data shows that respondents have applied for or received various individual benefits, reflecting efforts to promote sustainable and climate-resilient agricultural practices in the surveyed areas. The distribution of benefits aligns with local agricultural needs and priorities.

The trend in Proportionate Share of Different DBT Beneficiaries

In CM-VII Survey it was observed that the percentage of farmers availing of drip irrigation benefits increased from 18.2% in CM-IV to 21.5% in CM-V, further to 22.7% in CM-VI and 25.6% in CM-VII. This indicated a steady increase in the adoption of drip irrigation over time. Similar to drip irrigation, sprinkler irrigation also sees a gradual increase in adoption, though there is a slight dip in the CM-VII phase. Overall, it remains a popular choice among beneficiaries. The adoption was 13.1% in CM-IV, increased to 17.3% in CM-V and 19.7% in CM-VI respectively. In CM-VII it was 15.4%. FFS Host Farmer Assistance program experiences a decline in the number of beneficiaries over the phases, indicating that fewer farmers are receiving assistance from host farmers as the program progresses. It was 4.2% in CM-IV and now reduced to 2.0% in CM-VII. Beneficiaries for CR seed production show a

significant drop in the CM-V phase but then increase slightly in the CM-VII phase. It was 7.8% in CM-IV, 3.0% in CM-V, 2.7% in CM-VI and 3.1% in CM-VII. Backyard Poultry: Backyard poultry starts to gain some traction in CM-VI but then drops back to zero in CM-VII. The adoption was 1.2% in CM-V and 2.7% in CM-VI, while it was 0 in CM-VII. Farm mechanization sees a moderate increase in beneficiaries during CM-VI, but there's a slight decrease in CM-VII. The adoption was 1.2% in CM-V and increased to 2.7% in CM-VI, showed reduction to 0.6% in CM-VII. Beneficiaries for compost NADEP/vermi follow a fluctuating pattern, with no beneficiaries in CM-V and CM-VII. (CM-IV: 0.6%, CM-V: 0.0%, CM-VI: 1.8%, CM-VII: 0.0%). Horticulture plantation shows a significant increase in beneficiaries during CM-V, but the numbers drop in the subsequent phases. (CM-IV: 2.4%, CM-V: 6.3%, CM-VI: 1.5%, CM-VII: 1.4%).

Category-wise DBT Applications

In CM-VII Survey, Out of the total 480 beneficiaries it was recorded that 66.7% from OBC category (in CM-VI it was 58.1%), 42 beneficiaries (8.8%) were from General/Open category (12.7% in CM-VI), 9.4% from Scheduled Caste (7.5% in CM-VI), 5.2% Scheduled Tribe (8.8% in CM-VI) and 7.9% were from Nomadic Tribes (7.7% in CM-VI) and 2.1% mentioned other social categories were benefitted. This highlighted the social diversity of the beneficiaries and the importance of considering social categories in project design and implementation.

Training and Adoption of CR Technologies

In CM-VII Survey it was observed that highest number (140) of trainings were given for use of improved seed varieties and it was adopted by 65% beneficiaries, total 61 trainings were given for intercropping which was adopted by 70% of beneficiaries. Highest adoption of 94% was observed in training on Drip/Sprinkler irrigation. Other popular adoption to training were cultivation with BBF, IPM, use of machinery agricultural tools and contour cultivation.

A3: Promoting efficient and sustainable use of water for agriculture

Sources of irrigation

In Project area, out of 321 respondents, 99.7% answered that they had a source of irrigation on the land that they cultivate. This suggests that the overwhelming majority of the surveyed respondents have access to irrigation facilities for their agricultural activities. Only one respondent (0.3%) indicated that they do not have a source of irrigation on their cultivated land. The most common source of irrigation reported was "Dug Well," with 249 respondents (74.3%) indicating use this source for irrigation. The second was "Borewell," with 49 respondents (14.6%) followed by 11 respondents (3.3%) reported using rivers, 10 respondents (3.0%) reported using farm ponds, 2.7% indicated using earthen dams or check dams and 1.8% reported using other sources of irrigation. Only 1 respondent (0.3%) mentioned using canals as a source of irrigation.

Saline Area Feedback

A total of 121 beneficiaries were interviewed in Project area 84.3% are aware of salinity issues, 15.7% are not aware of salinity issues in the soil. About 78.9% reported that they follow the suggestions mentioned on the soil health card. With regard to irrigation 33.3% reported using drip irrigation as a method of irrigation, while 34.1% mentioned using sprinkler irrigation,

Component B: Post-harvest Management and Value Chain Promotion

Farmer Producer Companies

In CM-VII Survey it was found that 85% from Project and 66% from Control areas had mixed (Male and Female) membership in FPCs, and 15.4% in Project and 6.3% in Control had only Male membership. 21% Female membership. It was observed that out of 21 FPCs in Project area 92% were functional, while in Control out of 11 FPCs, 50% were functional. About 42.7% of FPCs in the project area are involved in the aggregation of agricultural produce, 12.6% of FPCs provide agricultural inputs such as seeds and fertilizers, 14.6% of FPCs help farmers access markets for their agricultural produce, 10.7% of FPCs are engaged in value addition activities for agricultural produce, 6.8% of FPCs offer training to farmers on best agricultural practices, 12.6% of FPCs in the project area are involved in various other activities.

Total 21 FPCs supported by the project were visited during CM-VII Survey, audited reports from 5 FPCs showed that they have started earning the profits, while 01 FPC had suffered loss and whereas from remaining 15 FPCs, no audit report was received.

Status of SHGs and Farmer Groups

In CM-VII Survey, 32 beneficiaries included 15 SHGs (with total Female members) and 14 Farmer groups (Male and Female members), and 3 with only Male members. While in case of control 16 SHGs were only of Female members. Out of total 32, the majority of the 23 respondents (71.9%) are saving on a monthly basis. This is the most common frequency for saving within the SHGs, 1 respondent (3.1%) reported saving on a weekly basis as part of their SHG and 8 respondents (25.0%) stated that they are not currently saving as part of their SHG. 43.8% reported that their SHG are currently involved in income-generating activities, while 56.3% stated that their SHG is not currently involved in income-generating activities.

Component C: Institutional Development, Knowledge and Policies

Exposure Visits, Trainings and Awareness

Participation in Exposure Visits:

Out of 415 respondents, 12.8% indicated that they had participated in exposure visits organized under the NDKSP project, 87.2% indicated negatively. A smaller proportion (12.8%) has had the chance to participate in these exposure visits, suggesting that there has been some level of outreach and engagement with a subset of the surveyed population.

Awareness of Project Information Boards

It was recorded that 46.1% were aware of the project information board, this suggests that a significant portion of the surveyed population is aware of this type of board. While 32.0% were aware of the VCRMC board, indicating a substantial but slightly smaller portion of respondents who are familiar with this specific type of information board. About 10.0% were aware of the board detailing activities under the project, which is known to a smaller percentage of the surveyed population.

Feedback About Agro-met Advisory

From a response recorded from 144 beneficiaries about Agro-met advisory services, 134 respondents (93.1%) found the Agro-met advisory to be useful and relevant. This indicates that the majority of respondents found the advisory information valuable and applicable to their agricultural practices. Only 3 respondents (2.1%) reported that they did not find the advisory useful. This suggests a very low percentage of respondents who did not benefit from the advisory services and 7 respondents (4.9%) considered the advisory to be general advice. This feedback suggests that some respondents may be looking for more specific or tailored information.

1. Project Overview

1.1. Project Background

Agriculture is the major occupation of the people in Maharashtra. The share of agriculture and allied activities in the total Gross State Value Added (GSVA) is 11.7 percent. Even though it shows a decreasing trend, a large population, especially in the rural areas is dependent on the sector for their livelihoods¹. Reduction in the average landholdings size, increase in small & marginal farmers, monsoon variabilities, water use efficiency and market fluctuations are some of the major challenges for the state. Around 40% of the state falls under drought prone area, having annual average rainfall less than 750 mm (29.5 in). Drought is observed in the state once every 5 years. In Maharashtra, growth in the sector fluctuates heavily and is depending on highly erratic rainfall during any particular year and rainfall variability over time. The distribution of rainfall is highly uneven within the state and ranges from over 4000 mm per annum in coastal areas to less than 400 mm in some of the most arid districts.

Agriculture remains the highest user of freshwater, withdrawing more than 80 per cent of the surface and groundwater (“blue water”) available to the state. Since the continuation of the State’s strong economic growth performance would have to be supported by higher water availability in all three sectors of the economy, there is a need for Maharashtra to better manage its water resources and in particular to enhance the efficiency of the water used for agriculture and focus on increasing the availability and use by the agriculture sector of “green water” (rainwater stored in the soil as soil moisture). Severe consecutive droughts experienced in large parts of Maharashtra in recent years have considerably affected the state’s agricultural performance and social fabric in rural areas and have prompted the highest-level state authorities to declare, “Drought proofing” of agriculture a key development priority of Maharashtra.

Vidarbha is one of the most drought prone area in the state, along with Marathwada. The region lies in the eastern part of Maharashtra comprising 11 districts out of which 7 have been selected as part of the Rest of Project area for PoCRA. The region occupies 31.6% of total area and holds 21.3% of total population of Maharashtra. Most of the crops are rain-fed comprising of cotton, soybean, pigeonpea and chickpea. According to ministry of Agriculture, cultivation of BT cotton in the region has added to the crisis, since the variety is sensitive to the water shortages.

¹ Average size of operational holding as per Agriculture Census 2015-16 is 1.34 ha whereas as per Agriculture census 2010-11 it was 1.44 ha. Number of small and marginal operational holdings were 121.55 lakh, which were 79.5 per cent of the total number of operational holdings. (Source: ES, 2020-21)

This has made cotton cultivation a high risk –high cost cultivation system in the region without assured irrigation and irregular rainfall.

According to ICRISAT reports, Climate Change has become a reality in Vidarbha region. IPCC states that extreme weather events are on the rise. The AR5 of IPCC says that rainfall will become more erratic, rainy days will reduce and intensity of rainfall will increase.

Given the above challenges, the Agriculture task force constituted by the NITI Aayog along with State govt. has proposed the following objectives for the DoA, GoM:

- Integrated farming approach, which includes Horticulture, Dairy & Animal Husbandry, Poultry, Fishery, Watershed infrastructure etc.
- Increasing production and productivity of crops.
- Timely supply of quality inputs viz. fertilizers, Insecticides, Seed etc. to farmers.
- Dissemination of technology developed in agriculture and allied sector.
- Collection of agriculture and allied data and area, production, productivity through crop cutting experiments and use of collected data for future planning.
- Horticulture development and soil health improvement through Mission.
- Use of micro-irrigation system for increasing area under irrigation and productivity of water.
- Promotion of Agriculture Mechanization to overcome the problems of labour shortage.
- Promotion for Organic Farming.
- Preparing for exploiting global opportunities in fruits & vegetables while emphasizing the dual approach increase in food security.

In the light of above challenges and strategy, a flagship *Project on Climate Resilient Agriculture in Maharashtra (PoCRA)* with the support of the World Bank is being implemented in the drought prone regions of Maharashtra.

1.2. PoCRA Project & Its Significance

The strategy for accelerating agricultural growth requires action in terms of bringing technology to the farmers, improving the efficiency of investments, increasing areas under irrigation, increasing systems support and rationalizing subsidies, diversifying cropping pattern, while protecting food security concerns, and fostering inclusiveness through a group approach, by which the small and marginal farmers will get better access to land, credit and skills.

Enhancing climate-resilience in agriculture involves the integration of adaptation, mitigation, and other practices in agriculture that increase the capacity of the farmer and his/her

production system to respond to various climate-related disturbances by resisting or tolerating the damage and recovering quickly.

To ensure the sustainability of the comprehensive on-farm and off-farm interventions required to build resilience in agriculture, there is a need to strengthen institutions, in particular at the local level, and improve their capacity to plan for adaptation to evolving climatic conditions and induce a change in local farming practices. In addition, the successful adoption of climate-resilient farming practices will largely depend on the farmer's perception of income gains from the new technologies, as profitability remains the most important incentive for change at farm level. To that effect, crop diversification, access to knowledge and farm assets needs to be accompanied by more market opportunities, which can be achieved through improved participation of organized smallholders in the corresponding value chains and the mobilization of private sector (e.g. Farmer Producer Organizations, agri-business SMEs).

1.3. Project Development Objective

The Project Development Objective (PDO) is ***to enhance climate-resilience and profitability of smallholder farming systems in selected districts of Maharashtra.*** PoCRA is built around a comprehensive, multi sector approach that focuses specifically on building climate resilience in agriculture through scaling up tested technologies and practices, while generating the following interdependent triple win solutions:

- I. **Enhanced water security at farm level** - through the adoption of technologies for a more efficient use of water for agriculture, the increase in water storage capacity (surface and sub-surface) and the improvement in water distribution structures to address on-farm water
- II. **Improved soil health** - through the adoption of good agricultural practices to improve soil fertility, soil nutrient management, and promote soil carbon sequestration; and
- III. **Increased farm productivity and crop diversification** - through the adoption of climate-resilient seed varieties (short maturity, drought and heat resistant, salt tolerant) and market-oriented crops with a clear potential for income security derived from the integration of farmers in corresponding value-chains.

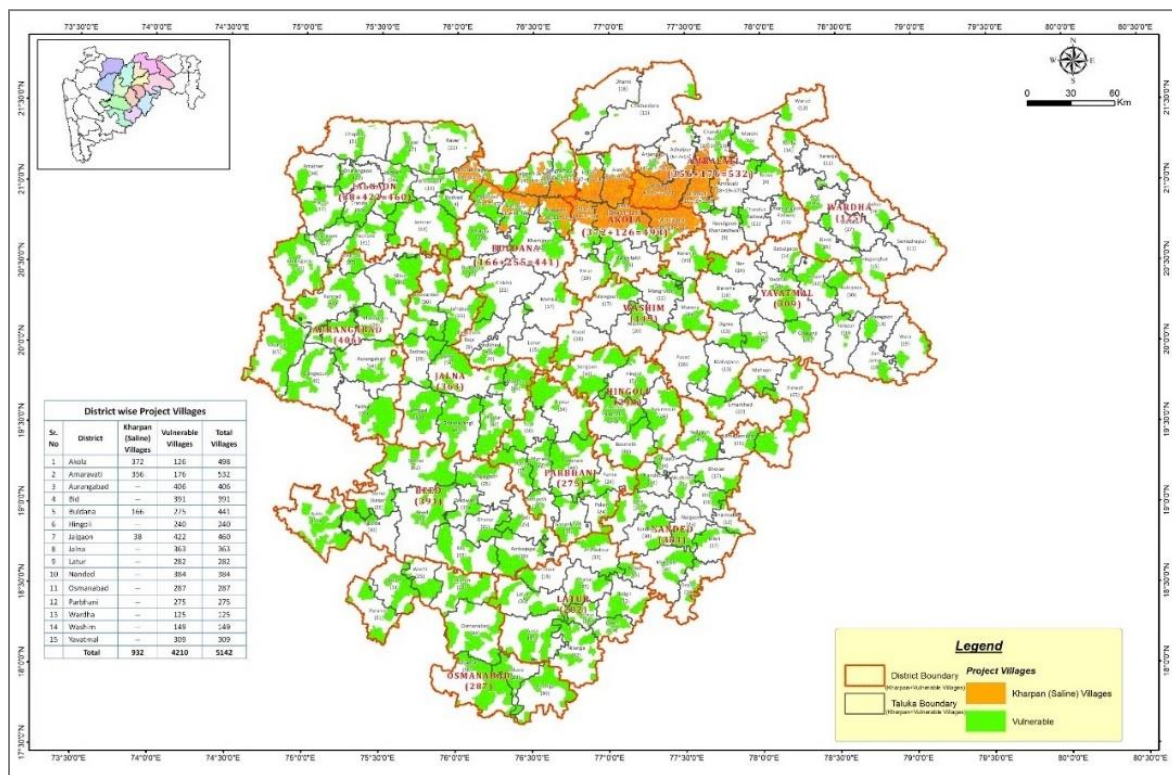


Figure 1: PoCRA Project Area

1.4. Project Components

The project is designed for implementation through the following components and subcomponents:

Comp A: Promoting Climate-resilient Agricultural Systems

- A.1: Participatory development of mini watershed plans.
- A.2: On-farm climate-resilient technologies and agronomic practices.
- A.3: Climate-resilient development of catchment areas

Comp B: Climate-Resilient Post-Harvest Management and Value Chain Promotion

- B.1: Promoting Farmer Producer Companies
- B.2: Strengthening emerging value-chains for climate-resilient commodities
- B.3: Improving the performance of the supply chain for climate-resilient seeds

Comp C: Institutional Development, Knowledge and Policies for a Climate-resilient Agriculture

- C.1: Sustainability and institutional capacity development
- C.2: Maharashtra Climate Innovation Centre
- C.3: Knowledge and policies

1.5. Study Area

CM-VII survey was conducted in the rest of the project area, which is the eastern region of Maharashtra with the revenue divisions and districts mentioned below:

- i. Amravati division: Amravati, Akola, Buldhana, Yavatmal & Washim
- ii. Nagpur Division: Wardha
- iii. Nashik division: Jalgaon (Khandesh)

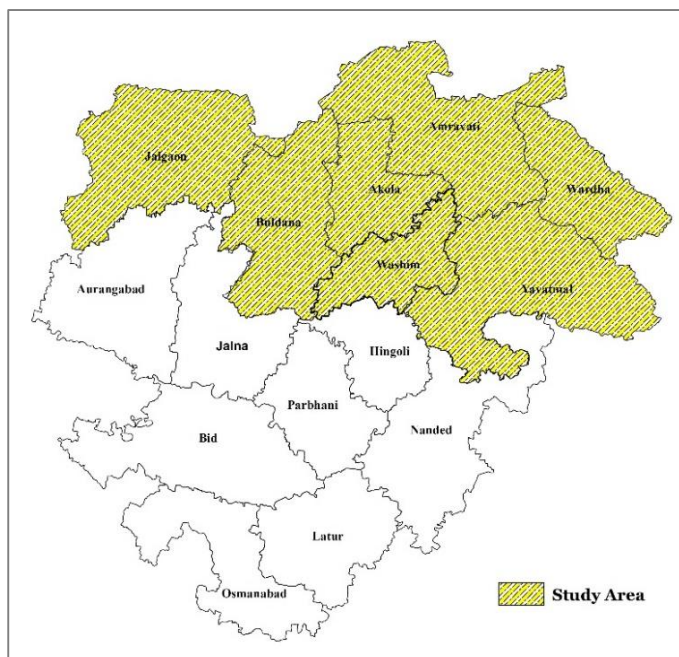


Figure 2: Study Area

The project area is classified under

.Agro-ecological sub-region characterized

as moist semi-arid ecological sub region with medium deep clayey black soils (shallow loamy to clayey black soils as inclusion). As per the planning commission, the domain districts of the project area viz., Akola, Washim, Buldhana, Amravati, Wardha and Yavatmal falls under agro-climatic zone *i.e.* western plateau and hills region. As per the NARP agro climatic zone classification, the project area is classified under Central Vidarbha (AZ- 97) whereas the Jalgaon district falls under Western Plateau and Hills Region (IX) with agro ecological sub region of Deccan plateau, hot semi-arid eco-region (6.3) Western Maharashtra plateau, and hot moist semi-arid eco- sub region.

The major *Kharif* crops grown in the districts are Cotton, Soybean and Pigeon pea. The area under cereal crops has declined gradually with the induction of cash crops. Major *Rabi* crops grown in the project area are Chickpea, Wheat and Sorghum. Major area is covered by Chickpea (Gram) followed by Wheat and rabi Sorghum.

The rest of the project area also includes a belt of salinity-affected area in the districts viz; Akola, Amravati, Buldhana and Jalgaon. Some of the villages in these districts fall under the vertisols of the Purna Valley, which are having saline tract. The term salinity refers to the presence in soil and water of various electrolytic mineral solutes in concentrations those are harmful to many agricultural crops.

2. Approach & Methodology

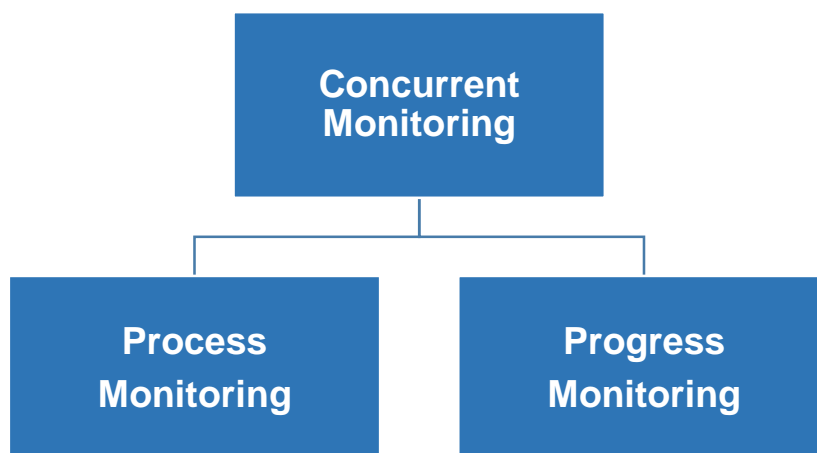
2.1. Objectives of Concurrent Monitoring

As per the ToR, Concurrent Monitoring focuses on process monitoring for all Components and sub-components of PoCRA. The concurrent monitoring will also look into the compliance with ESMF framework. In addition, values of the RFID indicators have to be also brought out as part of the monitoring.

The main objective of concurrent monitoring is the regular collection and reporting of information to track whether expected results are being achieved as planned. Concurrent Monitoring focuses on systematic and periodical collection and analysis of data for measuring process and progress of the project. A total of 10 concurrent monitoring rounds are planned to be conducted during the 5-year project period, once every six months. This round is 6th in the series.

2.2. Monitoring Framework

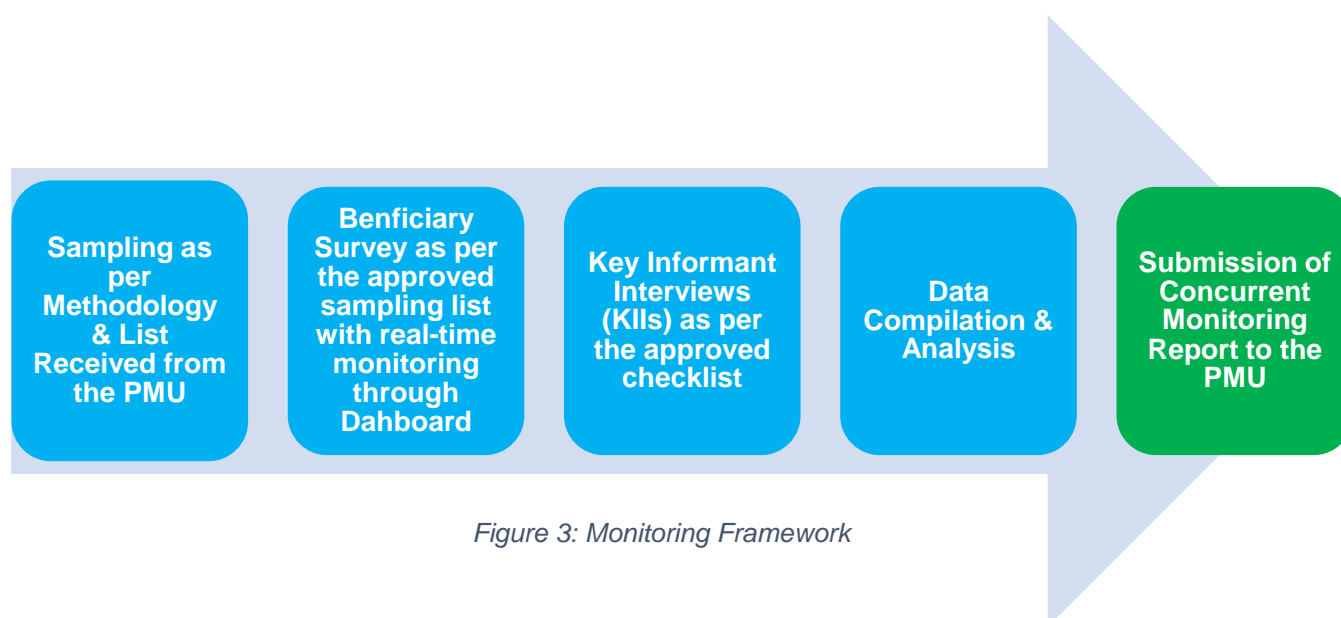
A mixed methods approach is used for collecting both quantitative and qualitative data for process and progress monitoring as part of CM-VII in the Rest of Project area.



Process monitoring focuses on the interventions being carried out as part of the project, whether and/or how well the activities are being implemented. It also covers the use of resources. It is designed to provide the information needed to continually plan and review work, assess the success of the implementation of the project, identify and deal with problems and challenges, and take advantage of opportunities as they arise.

Progress monitoring on the other hand, intends to assess the changes brought about by a project or programme on a continuous basis. Mostly the changes are measured with a set of indicators targeting the outcome level changes over a period. For PoCRA, the RFID indicators will be measured through concurrent monitoring.

The designed study tools focused on required information for the above parameters. To ensure that the monitoring is participatory, survey team had a detailed discussion at various stages of implementation with beneficiaries as well as in the form of Key Informant Interviews (KIIs).



2.3. Sampling Methodology

As per the ToR (Table below), the Concurrent Monitoring (CM) was conducted on a sample of 32 clusters in each round, covering the 320 clusters in 10 rounds. For this purpose, all the 320 project clusters were arranged district-wise and, within district, Taluk-wise. From this sorted list a systematic sample of 32 (one-tenth of the) clusters were selected by applying systematic random sampling procedure. From within each selected cluster, one village was selected at random for CM- VI.

Table 1: Sample Size as per ToR

Concurrent Progress Monitoring	No. of clusters in which the monitoring is to be conducted	No. of villages for treatment group (1 village per cluster)	No. of villages for control group
Concurrent 1	32	32	16
Concurrent 2	32	32	16
Concurrent 3	32	32	16
Concurrent 4	32	32	16
Concurrent 5	32	32	16
Concurrent 6	32	32	16
Concurrent 7	32	32	16

Concurrent 8	32	32	16
Concurrent 9	32	32	16
Concurrent 10	32	32	16
Total	320	320	160

For the control group, of the selected 32 project clusters, 16 clusters were selected systematically. Corresponding to each of these 16 project clusters, a matching (in terms of vulnerability index) 16 control clusters were selected preferably from the same districts and Taluks. Next, from each of these 16 selected control cluster, one village was selected at random. Thus, there are 16 control villages that are comparable and adjacent to the selected project villages. In total, there are 48 villages for CM-VII, 32 villages from project area and 16 villages from control area.

Selection of Beneficiaries (for individual activities)

For each selected project village, a list of individual beneficiaries, community beneficiaries, farmer field school participants and SHGs were obtained from the PMU. The corresponding list for the control villages was obtained by the field team by visiting the villages and enquiring with concerned officials or from their records.

- Beneficiaries covered under the POCRA project up till 31st March, 2023 were the target group for CM-VII.
- The list of individual DBT beneficiaries along with the benefits applied for (Pre sanctioned received & paid separately), Farmer Field School (FFS) participants was obtained from the PMU.
- Similarly, for Farmer Field School (FFS), both Host Farmers and Guest Farmers were obtained.

2.4. Selection of Beneficiaries

For selection of beneficiaries, separate lists of beneficiaries with pre-sanction given, subsidy released, host farmers, guest farmers, FPCs, SHGs and NRM villages for the project area were obtained from the PMU. For the control villages, the lists were made by visiting the villages, contacting officials and other means.

From the lists thus obtained from each selected village, 3 to 5 DBT beneficiaries with subsidy received (paid) and 2 DBT beneficiaries with Pre sanction given were selected. Regarding Farmer Field School, the sample was 1 Host farmer and 3 Guest farmers (including 1 woman) from each selected village.

In addition, wherever Farmer producer companies (FPCs) and SHGs were present, 5 FPC members including the director and 5 SHG members were selected. Furthermore, NRM work

undertaken in 5 villages were selected and the sample was 10 beneficiaries from each such NRM activity.

Procedure for Selection of DBT & FFS Beneficiaries

First, all the beneficiaries who were paid subsidy (as per PMU list) were sorted village-wise and repetition of names if any were discarded. The list was further sorted by sex of the beneficiary. From the sorted list, a systematic sample of 143 beneficiaries per village were selected. Secondly, the list of beneficiaries received for pre-sanction were sorted village-wise and repetition of names were excluded. Further, from this list, beneficiaries if any were already selected under paid category were also excluded. From the shorted list, a systematic sample of 2 beneficiaries per village with at least one female beneficiary, if any, were selected. However, if the number of beneficiaries in a village was less than 2 then all the beneficiaries were selected and the remaining required beneficiaries were selected from villages with very large number of beneficiaries.

The same procedure was applied in respect of selection of host farmers and guest farmers.

Procedure for Selection of FPC & SHG Beneficiaries

For FPC & SHG beneficiaries, a list of such institutions was supplied by the PMU and so a sample of institutions from the list was selected. During the field survey, the investigators were instructed to visit the selected sample institutions (FPCs & SHGs) and to obtain the list of members in them. From the list made in this way, a systematic sample of 5 members including director was selected for FPCs. For SHG, a systematic sample of 5 members including the president was selected for interview.

Control Village Beneficiary Selection

- In case of Control Villages, we have approached the functionaries like Agriculture Officer, Gram Panchayat and Village Watershed Committee and sought the list of individual beneficiaries and community activities like community farm pond and SHGs.
- A ratio of 2:1 is followed for selection of Project & Control Village beneficiary selection
- From the list obtained, systematic sample of 15 beneficiaries was selected from each village
- In few villages, the list of beneficiaries was not available. In this case, investigators identified the beneficiaries through 'Snowball Sampling' method and interviewing the beneficiaries in that particular village.

The Sampling Size for each of the beneficiary type is provided in the table below.

Table 2: Sample Size Selected for CM-VII

Beneficiary Type	Sample Size (considered till 31.03.23)	
	Project	Control
I. Individual Activity	333	171
1. DBT	207	108
a. Subsidy Disbursed	142	76
b. Pre Sanctioned Received (2 per village)	65	32
2. FFS	126	63
a. Host Farmers (1 per village)	32	17
7 b. Guest Farmers (female) (1 per village)	32	16
c. Guest Farmers (male) (2 per village)	62	30
II. Community Activity	147	73
1. NRM Works (10 per village in 5 Villages)	50	25
2. FPCs (Director + 2 members)	65	32
3. SHG members (Chairman + 3 members)	32	16
Total	480	244

In addition, PoCRA project functionaries from district level to village level, namely District Superintendent Agriculture Officer (DSAO) (1/district), Sub-division Agriculture Officer (SDAO) (1/subdivision), Agriculture Assistant/Cluster Assistant/ Agri Supervisor (1/cluster), FFS Facilitators/Coordinators (1/cluster), Krushi Tai (1/selected village), VCRMC (1/selected village) were also interviewed with a key informant interview checklist.

2.5. Study Tools

An overview of the Survey Tools is shown in the table below

Table 3: Snapshot of Survey Tool for Concurrent Monitoring

S No	Target Respondent(s)	Sampling Tool
1	Direct Beneficiary Transfer/ Individual Beneficiaries	Beneficiary Questionnaire
2	FFS (Host & Guest Farmers)	Beneficiary Questionnaire
3	NRM Work	Beneficiary Questionnaire
5	FIG /SHG/FPC	Beneficiary Questionnaire & KII Checklist
6	FGDs with VCRMC	Key Informant Interview (KII) Checklist
7	Krushi Tai	Key Informant Interview (KII) Checklist

8	FFS Facilitators/ Coordinators	Key Informant Interview (KII) Checklist
9	Agriculture Assistant/Cluster Assistant/Agri Supervisor	Key Informant Interview (KII) Checklist
10	Sub-division Agriculture Officer (SDAO)	Key Informant Interview (KII) Checklist
11	District Superintendent Agriculture Officer (DSAO)	Key Informant Interview (KII) Checklist

Beneficiary Questionnaire

A beneficiary questionnaire was administered to the selected sample beneficiaries as described above having the following information:

Part-A	Basic Information
Part-B	Farmer Field School (FFS)
Part-B (sub section)	Kharpan Area Feedback
Part-C	Individual Activities (Activity Wise Details to be filled)
Part-D	Community & NRM Work Activities
Part-E	FPCs & SHGs
Part-F	Democratic Feedback & Governance

Key Informant Interviews (KIIs)

Key Informant Interviews were conducted for eliciting responses from persons with informed perspective. The information obtained from the key informants was the qualitative information required for the process and progress monitoring for concurrent. Following KIIs were conducted as per the following checklists

- Checklist for Krushi Tai: Krushi Tai in the selected villages was identified and interviewed regarding their background, training obtained, activities in the field, number of farmers benefitted by type of benefit, opinion about cooperation from farmers, opinion about his/her role, and so on.
- Checklist for VCRMC: FGDs were conducted with the VCRMC to assess their membership, involvement of members, frequency of meeting, activities undertaken including selection and recommendation of beneficiaries for obtaining benefits, etc.
- FFS Facilitators/Coordinators
- Checklist for Agriculture Assistant/Cluster Assistant/Agri Supervisor

- Checklist for SDAO
- Checklist for Functionaries (DSAO/PD-ATMA, PS-Agri/PS-Agribusiness, PS Procurement & PS-HRD)
- SHG and FPO/FPC/FIG were interviewed using checklists as well as beneficiary questionnaire. Checklists was used in eliciting qualitative information on the perceived impacts, issues and challenges faced by them.

2.6. Data Collection Methodology

- Detailed questionnaires were prepared for beneficiaries, discussed and finalized with the PMU after the comments and suggestions
- KII Checklists were prepared and shared with the PMU for review
- In the next step, the questionnaires and checklist were refined based on the comments from PMU
- After finalization and approval from the PMU, they were field tested, refined and digitized into a computer assisted personal interview (CAPI) application. Post field-testing, the beneficiary questionnaire and checklists were modified, wherever required and finalized in consultation with the PMU.
- Simultaneously, required number of field investigators and supervisors with minimum graduate qualification and belonging to farmer-households in the project area were appointed.
- The investigators and supervisors were provided training & orientation before initiating the actual survey in the project area. The training was conducted using the finalized survey tool in the App.
- Rigorous training of supervisors and enumerators was conducted bi-weekly so that they were well versed with the roles & responsibilities of different functionaries, structure of project implementation, purpose of interviewing the functionaries, method of filling datasheets and preparation of qualitative reports.
- The dashboard for real time survey monitoring was created and shared with PMU

2.7. Quality Assurance Mechanism

- Continuous monitoring and field checking of the investigators were done by the supervisors through a dashboard created with login IDs
- The field supervisor team and the key experts were involved in the training of investigators and the field orientation. The local team from the project area with an experience in watershed management activities are present

- Field supervisors (one in each district) were engaged in the study for supervising data collection on a daily basis and checking for correctness and completeness of the data collected by the field enumerators during the field survey
- Additionally, the supervisors were in liaison with district officials, conducting Key Informant Interviews (KIIs) using the approved checklists and prepared summary report of the discussion points during KIIs
- Once the survey was completed, the data were checked for correctness, completeness, consistency and errors if any were corrected to the extent possible.
- After the data were checked and cleaned, required tables were generated in consultation with the subject experts, and appropriate indices were derived besides generating final tables and charts
- Simultaneously, drafting the concurrent monitoring report was taken-up by the subject experts and a combined report was finalized and submitted

3. Sample Coverage

As per the ToR, 32 clusters were selected for project area and matching 16 clusters were selected in control area. One village in each project and control cluster was selected as shown in the table below.

Table 4: Sample Coverage-Project Villages

Sample Coverage-Project Villages			
District	Clusters	Villages	Beneficiaries
AKOLA	8	8	75
AMRAVATI	6	6	52
BULDHANA	8	8	103
JALGAON	5	5	130
WARDHA	1	1	37
WASHIM	2	2	64
YAVATMAL	2	2	19
Total	32	32	480

Table 5: Sample Coverage- Control Villages

Sample Coverage-Control Villages			
District	Clusters	Villages	Beneficiaries
AKOLA	3	3	37
AMRAVATI	3	3	34
BULDHANA	4	4	48
JALGAON	4	4	65

WARDHA	-	-	35
WASHIM	1	1	17
YAVATMAL	1	1	8
Total	16	16	244

Beneficiary Sample Coverage

Total five categories have been covered as part of project beneficiaries: Direct Benefit Transfer (DBT-Pre & Post), Farmer Field School (FFS), Community based Natural Resource Management (NRM) activities, Farmer Producer Companies (FPCs) and Self-Help Groups (SHGs). A total 480 beneficiaries were covered as part of CM-VII. Of them 29.6% of the respondents (as part of CAPI application) were DBT beneficiaries, followed by 26.3% FFS members. NRM works comprised 10.4% of the beneficiaries. 13.5% were part of FPCs and 6.7% SHG under the project for CM-VII.

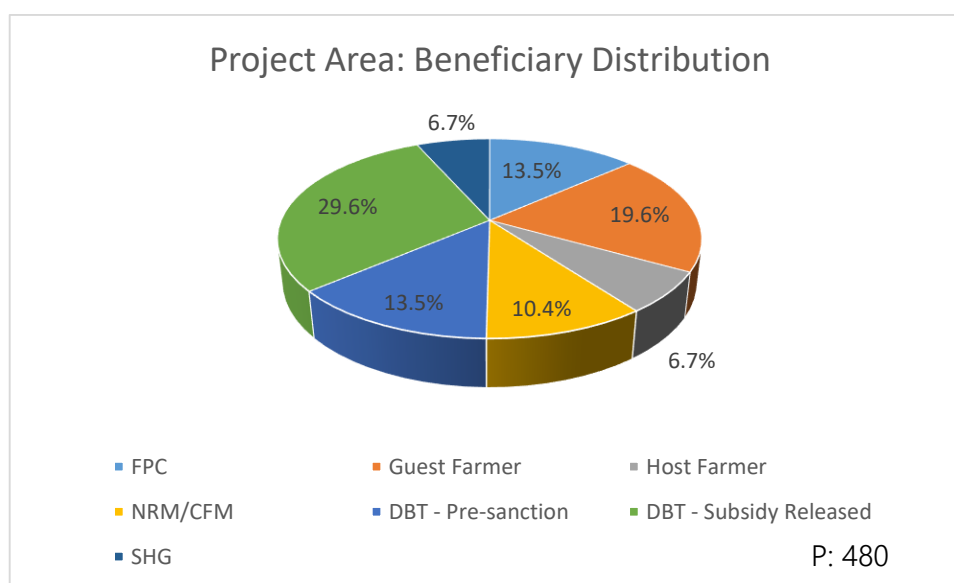


Figure 4: Beneficiary Distribution in Project Area

Table 6: Sample Coverage of Beneficiaries in Project Area

Activity/ District	Akola	Amravati	Buldhana	Jalgaon	Wardha	Washim	Yavatmal	Grand Total
FPC	14	9	12	3	3	21	3	65
Guest Farmer	22	14	22	18	4	6	8	94
Host Farmer	7	5	9	5	2	2	2	32
NRM/CFM	0	0	10	20	10	10	0	50
DBT - Pre-sanction	15	9	17	13	2	5	4	65
DBT - Subsidy Released	11	15	33	67	4	10	2	142
SHG	6	0	0	4	12	10		32
Grand Total	75	52	103	130	37	64	19	480

Beneficiary Sample Coverage in Control Villages

For control villages, total of 244 beneficiaries were covered under Individual activity like Sprinkler Irrigation, Drip Sets, Water Pumps, etc.; Community Activity like farm ponds, soil & water conservation structures; activities taken up by SHGs.

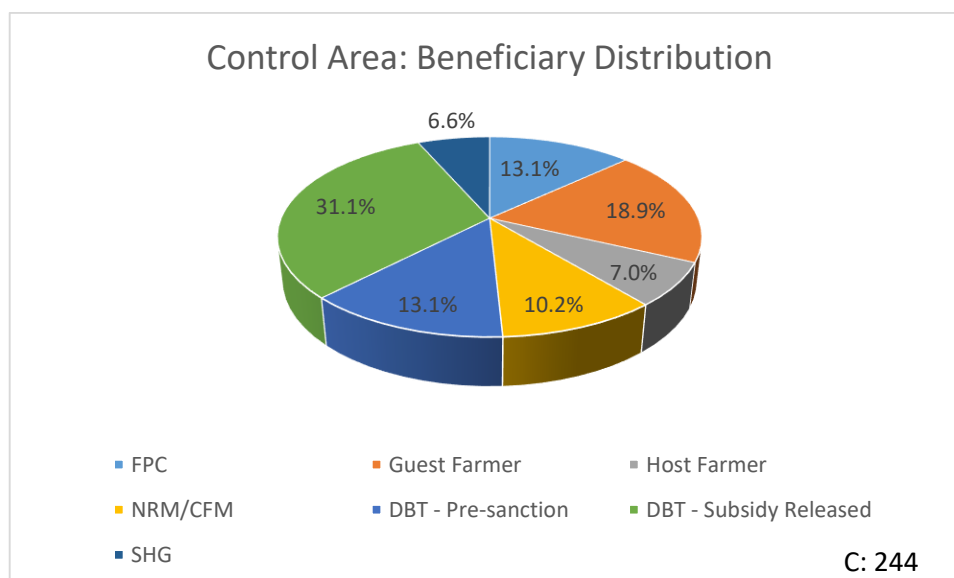


Figure 5: Beneficiary Distribution in Control Area

Table 7: Sample coverage of Beneficiaries in Control Villages

Activity/ District	Akola	Amravati	Buldhana	Jalgaon	Wardha	Washim	Yavatmal	Grand Total
FPC	6	5	6	0	9	6	0	32
Guest Farmer	11	8	9	9	3	3	3	46
Host Farmer	3	3	4	3	1	1	2	17
NRM/CFM	0	4	5	10	6	0	0	25
DBT - Pre-sanction	8	5	9	5	0	3	2	32
DBT - Subsidy Released	7	9	15	36	4	4	1	76
SHG	2	0	0	2	12	0	0	16
Grand Total	37	34	48	65	35	17	8	244

GIS Location of the Surveyed Villages

The following map shows the GIS locations of the Project and Control villages surveyed during CM-VII.

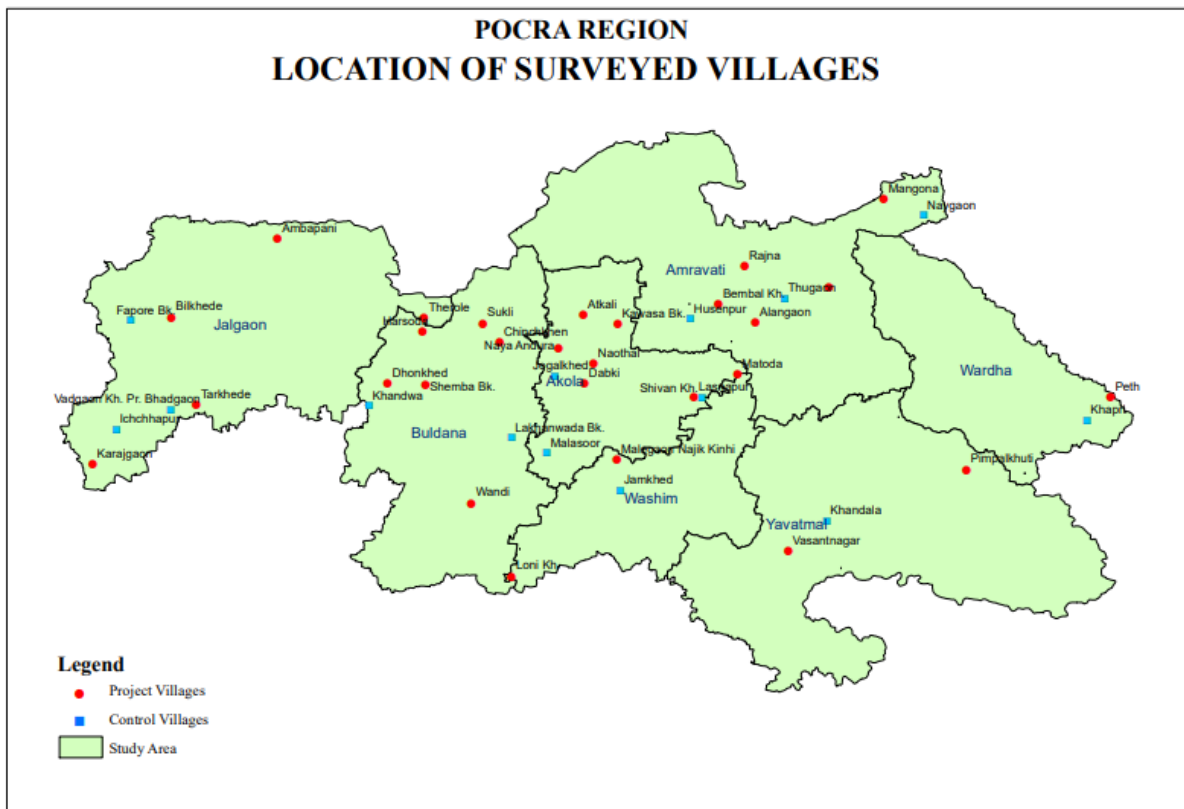


Figure 6: Beneficiary Coverage in Project & Control Villages for CM-VII Survey

4. Findings from CM-VII Survey

Component A: Promoting Climate Resilient Agriculture Systems

Climate Resilience in agricultural production systems is the main component under the project. The objective is to strengthen adaptive capacity of farmers through interventions at farm level, complemented by interventions for increasing access to irrigation.

The activities identified under this component have been prioritized through participatory micro planning. Farmers Field School (FFS) is one of the main activities under this component. The component also supports farmers through a range of agri-based activities through matching grants. Direct Benefit Transfer (DBT) technology is being used to ensure transparency and accountability.

As part of CM-VII, data has been collected on relevant parameters under this component and activities. Participatory micro planning, FFS and DBT effectiveness has been covered under this component part of three sub-components: *A1: Participatory Development of Mini Watershed Plans*; *A2: Climate-Smart Agriculture and Resilient Farming Systems* and; *A3: Promoting efficient and sustainable use of water for agriculture*. Feedback on activities, support through PoCRA, benefits, issues and challenges has been recorded and presented in this section.

A1: Participatory Development of Mini Watershed Plans

The foundation for any project is an effective Micro-Planning Process (MLP). The component supports the community to plan the adoption strategy at the village level. SDAO are responsible for overall MLP process. Village Climate Resilience Agriculture Management Committee (VCRMC) and female farmer friend (Krushi Tai) actively participation and facilitate to ensure effective micro planning. As part of the survey, feedback has been obtained from farmers, VCRMC & Krushi Tai on the awareness, functioning, issues and challenges.

Salient Features of Micro Plans

Micro planning has been completed in Phase-I villages. Some of the parameters included in micro plans are presented in the table below. Based on these parameters, activities are decided and it is ensured that maximum benefit is for the socio-economic vulnerable groups.

Table 8: Salient Features of MLPs

S No	Parameters	Description
1	Village/Cluster Profile	Profiling of village/ cluster with respect to socio economic conditions, geo-physical characteristics, agriculture scenario, livestock status, infrastructure status and existing knowledge-extension services and ongoing scheme/programmes/ projects
2	Resource analysis	An account of natural resources existing in the village/ cluster with strength, weakness, opportunity and challenges.
3	Constraint analysis	Identification and analysis of constraints with respect to climate variability, surface & ground water status, soil health, crop productivity, post-harvest infrastructure & marketing, social and gender aspects
4	Causal analysis	Causes for the constraints identified in relation to - (a) Gaps in the yields of field crops, vegetable crops and fruit crops in the village (b) Gaps in development of the value chain of major commodities in the village.
5	Water Balance	Computation of water balance using the mobile application developed by the project. Description about the water balance of the village/ cluster considering the existing water harvesting structures and potential soil & water conservation treatments. Mapping of the proposed soil and water conservation structures along with crop planning based on water balance.
6	Opportunity mapping	An account of special needs of marginal and small holders, women, scheduled caste and tribe, and vulnerable category like differently abled etc.
7	Training Need Analysis	Description about the training needs including skills to be imparted to farmers, VCRMC members, women, youth and farmer/ women groups
8	Proposed interventions	Description of the interventions aiming at enhancing water security, soil health, crop production, agribusiness, mechanization, alternate and sustainable livelihood. Interventions to strengthen commodity value chains, infrastructure, better mobilization of farmers, imparting knowledge services
9	Livelihood and Agribusiness Plan	Plan for potential sustainable livelihood, agro-based enterprises, value chain development for the village/ cluster. The plan also takes into account the needs of the SHGs/FIGs/FPOs in the village/cluster
10	Environment and Social safeguards	Environment Screening checklist and compliance to social inclusiveness

Awareness on Participatory Project & Micro Planning

As a part of CM-VII Survey beneficiaries except FPO category (total 415 respondents) were asked about their awareness of any village level micro-planning on watershed management conducted in their villages. Out of 415 respondents, 171 respondents (41.2%) indicated that they were aware of village-level micro-planning on watershed management. This suggests that a significant portion of the surveyed population has knowledge about such initiatives in their village. While, 244 respondents (58.8%) stated that they are not aware of any village-level micro-planning on watershed management. This indicates that a larger percentage of the surveyed population is unaware of such activities in their village.

In summary, the data shows that while there was some awareness of village-level micro-planning on watershed management among the respondents, a larger portion of the population remains uninformed about such initiatives. Further analysis or follow-up questions may be needed to understand the reasons behind this lack of awareness and to assess the effectiveness of these watershed management efforts in these villages.

Participation in the Development of Village Micro-Plans:

Out of 171 respondents, 97 (56.7%) stated that they or their family members have participated in the development of their village's micro-plans as part of the NDKSP project. This indicates that a significant portion of the surveyed population has been actively involved in the planning process and remaining 74 respondents (43.3%) indicated that they or their family members did not participate in the development of their village's micro-plans for the NDKSP project. This means that more than half of the respondents (56.7%) have been engaged in the development of micro-plans, suggesting a relatively high level of community involvement or interest in the project. Approximately 43.3% of the respondents or their family members did not participate in the development of these plans. This could be due to various reasons such as lack of awareness, lack of interest, or not being directly involved in the planning process.

Perception of the Water Budgeting Application:

About 45 respondents (26.3%) from the total 171 respondents found the water budgeting application to be very useful. This suggests that a significant portion of those surveyed considered the application to be highly beneficial for the micro-planning process, while 108 respondents (63.2%) found the water budgeting application to be useful. This indicates that a majority of respondents viewed the application as beneficial for the micro-planning process, even though it might not have been rated as "very useful." Only 1 respondent (0.6%) stated that the water budgeting application was not useful. This is a very low percentage, suggesting that the vast majority of respondents found some level of utility in the application. 17 respondents (9.9%) mentioned that they were not aware of the existence of this application.

This suggests a small portion of respondents were unaware of its existence or might not have used it. The majority of respondents (89.5%) found the water budgeting application to be either very useful or useful, indicating a positive perception of its role in the micro-planning process. Only a very small percentage (0.6%) considered the application not useful, indicating a high level of satisfaction with the tool. There is a small proportion (9.9%) who were not aware of the application, which could indicate a need for better communication or training regarding the tools and resources available for micro-planning. Overall, the data suggests that the water budgeting application was generally well-received by the respondents and played a valuable role in the micro-planning process.

Rating of the Micro Plan:

It was asked to rate the micro plan prepared for their villages, from 415 respondents, 3 (0.7%) rated the micro plan as "Unsatisfactory," indicating a very small minority with a negative perception of the plan, 147 respondents (35.4%) indicated that they found the micro plan to be neither satisfactory nor unsatisfactory. This suggests a significant portion of respondents had a neutral opinion or were unsure about the quality of the plan. While, 265 respondents (63.9%) rated the micro plan as "Satisfactory," indicating that a substantial majority of the surveyed population found the plan to be acceptable or good. In summary, the data suggests that the majority of respondents were satisfied with the micro plan prepared for their village, although there is a group that had neutral or uncertain opinions, and a very small minority found it unsatisfactory.

Awareness of Water Budgeting Process:

As per CM-VII questionnaire it was asked to the beneficiaries about their awareness of the water budgeting process conducted in their village. It was observed that 80 respondents (19.3%) from 415 beneficiaries indicated that they were aware of the water budgeting process conducted in their village. This suggests that a relatively small portion of the surveyed population is informed about this process. While 335 respondents (80.7%) answered "No," indicating that the vast majority of respondents are not aware of the water budgeting process in their village. This highlights that there was a lack of awareness among the majority of respondents regarding the water budgeting process in their village.

Perception of VCRMC Representation:

From 415 respondents, 215 respondents (51.8%) indicated that they believe the VCRMC members do represent all sections of society in their village. This suggests that a little over half of the surveyed population is satisfied with the representation of the committee. While, 29 respondents (7.0%) answered "No," suggesting that a small minority believes that the VCRMC members do not adequately represent all sections of society in their village. About 171

respondents (41.2%) answered "Can't Say," which implies that a significant portion of respondents were unsure or did not have a clear opinion on whether the VCRMC members represent all sections of society. Further investigation may be necessary to understand why some respondents are uncertain or dissatisfied with the committee's representation and whether there are specific areas of concern that need to be addressed in the future.

Satisfaction with VCRMC's Work:

In response to question on satisfaction of work done by VCRMC, 327 respondents (78.8%) from 415 beneficiaries, rated the work of the VCRMC as "Satisfactory," indicating that a substantial majority of the surveyed population was satisfied with the committee's performance. 87 respondents (21.0%) indicated that they found the work of the VCRMC to be neither satisfactory nor unsatisfactory. This suggests that a portion of respondents had a neutral or uncertain opinion about the committee's work. While only 1 respondent (0.2%) rated the work of the VCRMC as "Unsatisfactory," indicating an extremely small minority with a negative perception of the committee's performance. The overwhelming majority of respondents (78.8%) expressed satisfaction with the work of the VCRMC, suggesting that most of the surveyed population has a positive perception of the committee's efforts. A significant portion (21.0%) neither found the VCRMC's work satisfactory nor unsatisfactory, indicating some level of uncertainty or neutrality about the committee's performance.

Only an extremely small percentage (0.2%) of respondents found the VCRMC's work unsatisfactory, suggesting that negative perceptions are rare. In summary, the data suggests that the VCRMC's work is generally well-received by the surveyed population, with a strong majority expressing satisfaction. However, there is a smaller group with neutral or uncertain opinions, and an even smaller minority with negative perceptions. Further investigation or follow-up questions may be needed to understand specific reasons for these perceptions and to gather feedback for potential improvements.

Satisfaction with Project Staff Support:

The overwhelming majority of respondents (81.9%) expressed satisfaction with the support provided by project staff during the application process and in availing project benefits. This indicates that most of the surveyed population has a positive perception of the project staff's efforts. A notable portion (17.6%) neither found the support satisfactory nor unsatisfactory, suggesting some level of uncertainty or neutrality about the support they received. Only an extremely small percentage (0.5%) of respondents found the support unsatisfactory, indicating that negative perceptions of project staff support are rare. In summary, the data suggests that the support provided by project staff in the application process and benefit availing is generally well-received by the surveyed population, with a strong majority expressing satisfaction.

However, there is a smaller group with neutral or uncertain opinions, and an even smaller minority with negative perceptions.

Satisfaction with FFS Facilitator's Knowledge:

As a part of questionnaire it was asked to the beneficiaries about their level of satisfaction with the knowledge of the Farmer Field School (FFS) facilitator who conducted technology demonstration sessions in the FFS. The overwhelming majority of respondents (76.1%) expressed satisfaction with the knowledge of the FFS facilitator who conducted technology demonstration sessions. This indicates that most of the surveyed population has a positive perception of the facilitator's expertise. A notable portion (23.6%) neither found the facilitator's knowledge satisfactory nor unsatisfactory, suggesting some level of uncertainty or neutrality about the facilitator's expertise. Only an extremely small percentage (0.2%) of respondents found the facilitator's knowledge unsatisfactory, indicating that negative perceptions of the facilitator's expertise are rare. In summary, the data suggests that the knowledge of the FFS facilitator who conducted technology demonstration sessions is generally well-received by the surveyed population, with a strong majority expressing satisfaction. However, there is a smaller group with neutral or uncertain opinions, and an even smaller minority with negative perceptions.

Satisfaction with Krushi Tai's Work Performance and Support:

With regard to question on satisfaction with Krushi Tai's work performance and support, 309 respondents (74.5%) rated the work performance and support from Krushi Tai as "Satisfactory," indicating that a substantial majority of the surveyed population was satisfied with the support received, 92 respondents (22.2%) indicated that they found Krushi Tai's work performance and support neither satisfactory nor unsatisfactory. This suggests that a significant portion of respondents had a neutral or uncertain opinion about Krushi Tai's performance. While, 14 respondents (3.4%) rated the work performance and support from Krushi Tai as "Unsatisfactory," indicating a small minority with a negative perception of Krushi Tai's performance. The data suggests that the work performance and support provided by Krushi Tai are generally well-received by the surveyed population, with a strong majority expressing satisfaction. However, there is a smaller group with neutral or uncertain opinions, and an even smaller minority with negative perceptions. Further investigation or follow-up questions may be needed to understand specific reasons for these perceptions and to gather feedback for potential improvements in Krushi Tai's services.

A2: Promoting Climate Resilient Agriculture

Main objective under this component was maximizing productivity through transfer and adoption of climate resilient technologies. Feedback of farmers was obtained on agriculture practices, farmers' field school, and support through DBT activities. A comparison between project and control had also been presented.

Feedback on Agriculture Practices and Landholding Pattern

Understanding the impacts of climate change on smallholder farmers and Project Area, a region where small-scale agriculture is central to economic development, food security, and local livelihoods. In CM-VII Survey, out of the total interviewed 719 beneficiaries from Project villages, the percentage of marginal farmers holding less than 1 ha of land is 33.38% followed by small farmers holding less than 2 hectares of land was 44.37, while 17.94 per cent farmers came under the bracket of Semi-Medium farmers landholdings (land with a range of 2 to 4 hectares) and 4.17% farmers falls under Medium category of farmers. The landholding data collected from 362 samples from Control villages showed 32.87% per cent farmers came under the bracket of marginal farmers, having landholding in less than 1 hectare in Control villages whereas Small farmers are 41.99% followed by Semi-Medium farmers with 20.72% and Medium farmer with 3.87%. Large farmers were not reported having the land more than 10 ha. Climate change poses a significant threat to smallholder farmers and threatens to undermine global progress toward poverty alleviation, food security, and sustainable development.

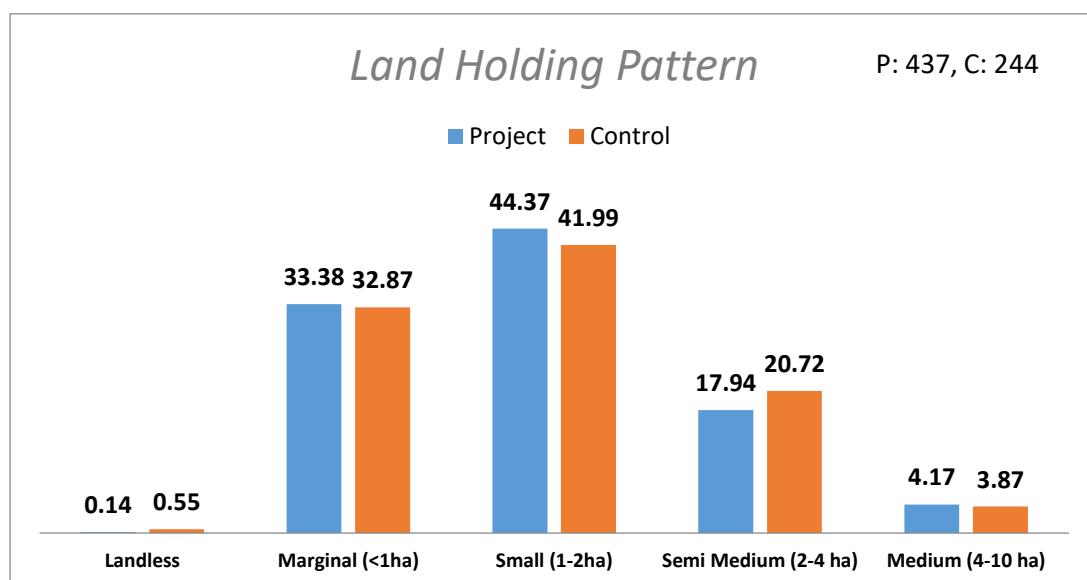


Figure 7: Land holding Pattern in CM-VII Survey

Ownership and Cultivation of Agricultural Land:

In CM-VII Survey questionnaire it was asked to the beneficiaries whether their household owns and/or cultivates any agricultural land. In Project area, 437 beneficiaries (91.0%) said that their household owns and/or cultivates agricultural land. This suggests that a significant majority of the surveyed households are engaged in agricultural activities, either through ownership or cultivation of land. While, 43 beneficiaries (9.0%) said that their household does not own or cultivate any agricultural land. A smaller but still notable portion of households (9.0%) do not own or cultivate any agricultural land, indicated that there was some diversity in livelihood activities beyond agriculture among the surveyed population.

As compared to Control Areas, out of total 244 household surveyed, 219 respondents (89.8%) answered that their household owns and/or cultivates agricultural land and 25 (10.2%) beneficiaries said that their household does not own or cultivate any agricultural land.

Ownership of Agricultural Land by Women Members:

As a part of questionnaire it was asked whether any women member in their household owns any agricultural land. In Project area, out of 437 beneficiaries, 123(28.1%) answered that there are at least one women member in their household who owns agricultural land and 314(71.9%) beneficiaries answered that there are no women members in their household who own agricultural land. This data highlights the presence of women landowners in a significant portion of the surveyed households, but there is still room for increasing gender-inclusive landownership and empowering women in land-related matters.

While in Control area, out of total 219 respondents, 57(26.0%) indicated that there are at least one women member in their household who owns agricultural land and 162 (74.0%) said that there are no women members in their household who own agricultural land.

Average Landholding

With total land holders it was found that average landholding was 1.42 ha in Project villages and 1.44 ha in Control whereas the average irrigated area is 0.93 ha in project villages and 1.01 ha in control.

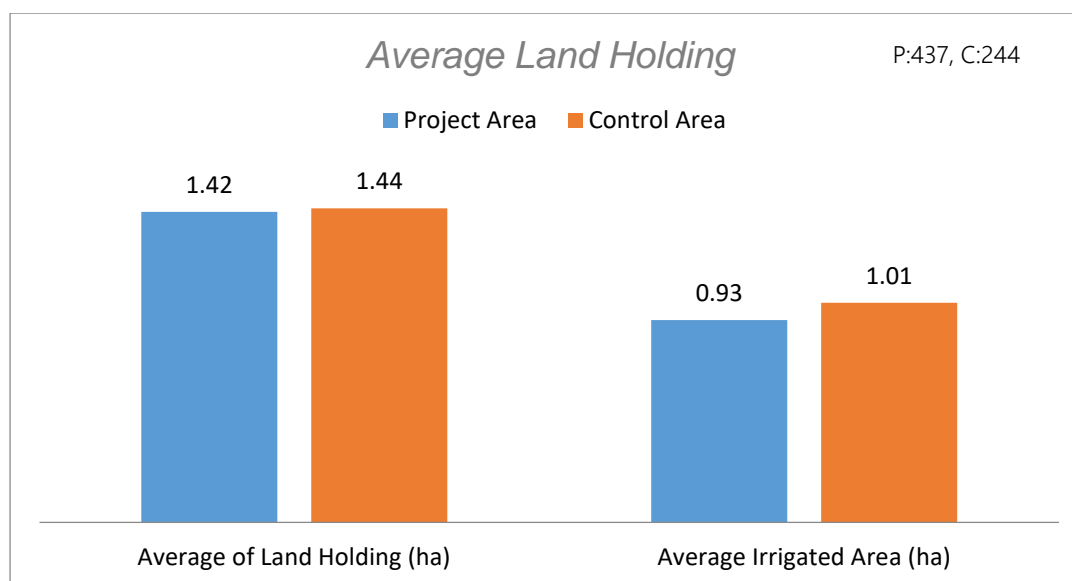


Figure 8: Average Land Holding

Distribution of Soil Types:

In CM-VII questionnaire beneficiaries were about the soil types in their agricultural land. In Project area, out of 437 respondents, 382 respondents (87.4%) reported having black soil in their agricultural land, 14 (3.2%) reported having red soil, 20 respondents (4.6%) reported having clay soil, 11 respondents (2.5%) reported having laterite soil. Laterite soil is common in tropical regions and can be challenging for agriculture while, 10 respondents (2.3%) reported having crystalline rock, which is generally not suitable for agriculture without significant modification. The majority of respondents (87.4%) indicated that they have black soil, which is considered favorable for agriculture due to its high fertility.

While in Control areas, out of total of 219 beneficiaries 195 respondents (89.0%) reported having black soil, 16(7.3%) reported red soil, 2 (0.9%) reported laterite soil and alluvial soil respectively, while 4 respondents (1.8%) reported having crystalline rock, which is generally not suitable for agriculture without significant modification.

Cropping Pattern

The following graph clearly shows the cropping pattern observed during CM-7 Survey. In *Kharif* season, Cotton occupied highest in Project villages as it was preferred by 51.19 per cent of beneficiaries, while it was 55.87 per cent in Control villages. However, Soybean was in Control Villages as it was reported by 33.2 per cent of beneficiaries, while in Project the response was only 33.79 per cent. Pigeon Pea occupied the third position with 11.66 per cent beneficiaries in Project Villages and 9.31 per cent in Control. The maize had very less preference in these villages with 0.2 per cent from Project beneficiaries and 0.4 per cent from control. Similarly, 3.16 per cent beneficiaries from project and 1.22 per cent from Control villages preferred other crops to cultivate.

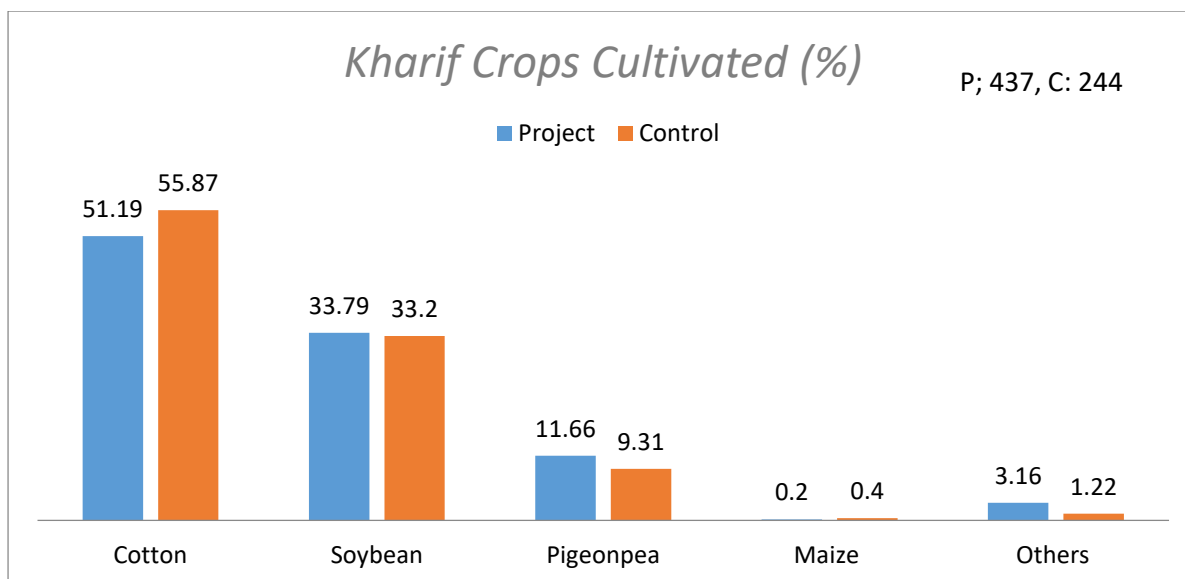


Figure 9: Kharif Crops Cultivated (%)

As per CM-VII Survey data, Chickpea happened to be most preferable crop during *Rabi* season covering 72.06 per cent in project villages and 60.34 per cent in control. Wheat occupied the second with 17.24 per cent beneficiaries from Control villages growing this crop following by 17.24 per cent beneficiaries from Project Villages. *Rabi* season Maize occupied the third position with Project area occupying 1.47 per cent area and Control villages 8.62 percent. Other crops occupied 8.82 per cent villages in Project and 5.18 per cent in Control villages.

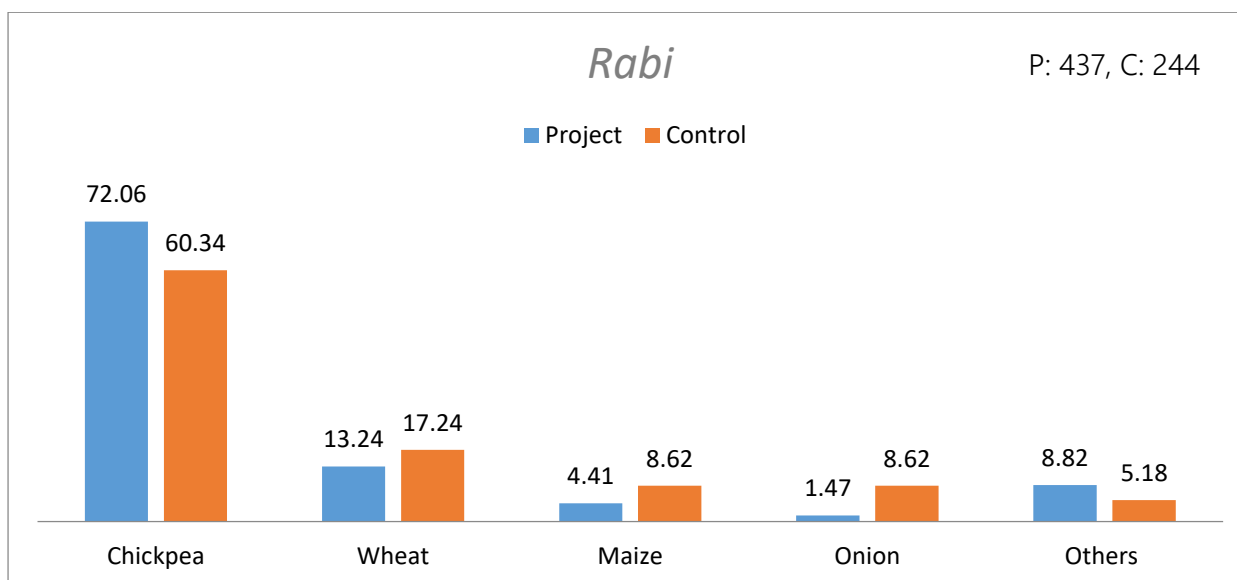


Figure 10: Rabi crops cultivated (%)

Area, Production & Yield of Major Crops

Area, Production and Yield of major crops recorded in project and control villages is shown in the table below. Yield of major crops were was reported as Soybean (P: 7.94, C: 7.33 q/acre),

Cotton(P:8.32, C:8.14 q/acre), Pigeon pea (P:6.61, C: 6.10 q/acre), Green gram (P:4.15, C:0.0 q/acre) and in *Rabi* season Chickpea (P: 6.86, C: 6.20 q/acre), Wheat (P:10.71, C:7.73 q/acre), *Rabi* Maize (P:27.00, C:16.62 q/acre) and *Rabi* Sorghum (P:16.00, C:15.00 q/acre) respectively in project and control villages.

Table 9: Area, Production and Yield of Major Crops Reported in CM-VII

		Project				Control			
Sr. No.	Crop	Responses	Avg. Area (Acre)	Avg. Production (q)	Avg. Yield (q /acre)	Responses	Avg. Area (Acre)	Avg. Production (q)	Avg. Yield (q/ acre)
	Kharif								
1	Soybean	171	4.55	33.43	7.94	82	3.85	29.98	7.33
2	Cotton	259	3.38	28.08	8.32	138	3.93	31.95	8.14
3	Pigeon Pea	59	1.13	7.47	6.61	23	1.00	7.91	6.10
4	Green Gram	2	3.25	13.50	4.15	-	-	-	-
	Rabi								
1	Chickpea	98	4.45	30.48	6.86	35	4.35	30.40	6.20
2	Wheat	18	2.42	25.89	10.71	10	3.70	28.60	7.73
3	Rabi Maize	6	2.50	67.50	27.00	5	2.60	43.20	16.62
4	Sorghum	1	1.00	16.00	16.00	1	4.00	60.00	15.00

Cost of Cultivation of Major Crops

Cost of cultivation of major crops in project and control villages is shown in the table below. The cost has been calculated using the Directorate of Economics & Statistics methodology. The highest cost of cultivation was recorded for Cotton (Project: Rs.24645/acre; Control: Rs.24431/acre) followed by Soybean (Project: Rs.21030/acre, Control: Rs.21394/acre) and in rabi season the crop Chickpea (Project: Rs.20805/acre; Control: Rs.22338/acre). The CoC for Kharif Pigeon Pea is (Project: Rs. 18187/acre, Control: Rs. 18906/acre) was found minimum for Greengram (Project: Rs. 12590/acre, Control: None of farmer cultivated the greengram in control).

Table 10: Cost of Cultivation of Major Crops

Village Type	Crop Name	Soybean	Cotton	Pigeon Pea	Greengram	Chickpea
Project	Responses	171	259	61	2	99
	Average of Working Capital (From Column N To U - Family labour = Working capital) Rs.	13627	15456	7932	8650	13732

	Average of COST A1 (Land preparation to Other charges+ Interest on working capital @6%+ Depreciation on fixed cost Rs.	15014	17044	8940	9663	15245
	Average of COST A2 (COST A1+ Rent paid for leased in land) Rs.	15014	17044	8940	9663	15245
	Average of COST B (Cost A2+Rental value of own land + Interest on owned fixed capital) Rs.	20369	24016	17647	12340	20169
	Average of COST C (COST B+ Family labour) Rs. Total Coc / acre	21030	24645	18187	12590	20805
Control	Responses	82	138	23	0	35
	Average of Working Capital (From Column N To U - Family labour = Working capital) Rs.	13813	15059	8468	-	14847
	Average of COST A1 (Land preparation to Other charges+ Interest on working capital @6%+ Depreciation on fixed cost Rs.	15211	16623	9508	-	16427
	Average of COST A2 (COST A1+ Rent paid for leased in land) Rs.	15211	16623	9508	-	16427
	Average of COST B (Cost A2+Rental value of own land + Interest on owned fixed capital) Rs.	20566	23595	18215	-	21351
	Average of COST C (COST B+ Family labour) Rs. Total Coc/ acre	21394	24431	18906	-	22338

Percentage Change in Cost of Cultivation

Percentage Change in Cost of Cultivation for major crops like Cotton, Soybean, Chickpea and Green Gram from CM-II to CM-VII in Project villages is highlighted in the table below.

Table 11: Percentage of Increase/ Decrease in CoC from CM-II to CM-VII

Crop Name	Cotton	Soybean	Pigeon pea	Chickpea	Green Gram
CM-II	24993	18460	15921	20814	13482
CM-III Value (Rs.)	22956	18301	16339	19454	12483
CM-IV Value (Rs.)	22073	18935	15960	20068	10862
CM-V Value (Rs.)	23197	19428	15729	19253	10779
CM-VI Value (Rs.)	27865	21154	17470	20011	12308

<i>CM-VII Value (Rs.)</i>	24645	21030	18187	20805	12590
% Decrease/ increased in CoC (CM-II to CM-IV)	13.23%	-2.51%	-0.24%	3.72%	24.12%
% Decrease/ increased in CoC (CM-II to CM-V)	-7.2%	5.2%	-1.2%	-7.5%	-20.0%
% Decrease/ increased in CoC (CM-IV to CM-V)	5.1%	2.6%	-0.4%	-4.1%	-0.8%
% Decrease/ increased in CoC (CM-V to CM-VI)	16.8%	8.2%	10.0%	3.8%	12.4%
% Decrease/ increased in CoC (CM-VI to CM-VII)	-13.07%	-0.59%	3.94%	3.82%	2.24%

Percentage Change in Cost of Cultivation for major crops like cotton, soybean, pigeonpea, Chickpea and Green Gram from CM-II to CM-VII in project villages is highlighted in the table above. It was observed that the cost of cultivation for the majorly cultivated crops like; soybean and cotton the cost of cultivation has been reduced by 13.07% and 0.59% respectively. This may be attributed to the effect of interventions applied in project villages. However, the cost of cultivation for pigeonpea, Chickpea and greengram has been slightly increased by 3.94%, 3.82% and 2.24% respectively as compared to CM-VI. The probable reasons in reduction of cost of cultivation in Cotton and Soybean are highlighted below:

- Use of own seeds has increased considerably resulting in reducing the cost of cultivation, especially in soybean, greengram and chickpea in project villages as compared to control.
- Improved adoption of farm mechanization and improved farm implements at through Custom Hiring Centres (CHCs) and individual beneficiaries as part of the project has been a major factor in reducing labour cost. Farm machineries/implements as part of these CHCs under the project include tractor, rotavator, ploughs, cultivators, sowing machines, BBF planter, threshers, which helps in curtailing the labour requirement and thereby reduction in cost of cultivation in project villages as compared to control.
- Increased awareness among farmers about optimum use of chemical fertilizers through extension activities and FFS demonstrations has resulted in reduction in the excessive use of chemical fertilizers, thereby reducing costs in project villages to that of control.
- Promotion and use of biological and organic insecticides/pesticides viz.; *neemark*, *panchamrut*, pheromone traps, light traps under the project instead of extensive use of chemical pesticides. This has resulted in reducing repeated spraying and hence

lowering down the expenses for control of pest and diseases in project villages as compared to control.

- Improvement in water use efficiency through use of protective irrigation through sprinkler systems, drip system, PVC pipes, motor pumps at farm level has resulted in reducing labour costs for irrigation purposes in project villages versus control.

Activities for Climate Resilient Agriculture Systems

The PoCRA project has been designed to promote Climate Resilient Agriculture. As a part of Survey, we have collected data related to adoption of CR technologies, training received and benefits distribution to vulnerable sections as SC, ST, Women and Landless.

The trend in Proportionate Share of Different DBT Beneficiaries

The relative share from previous Surveys are presented in the following chart.

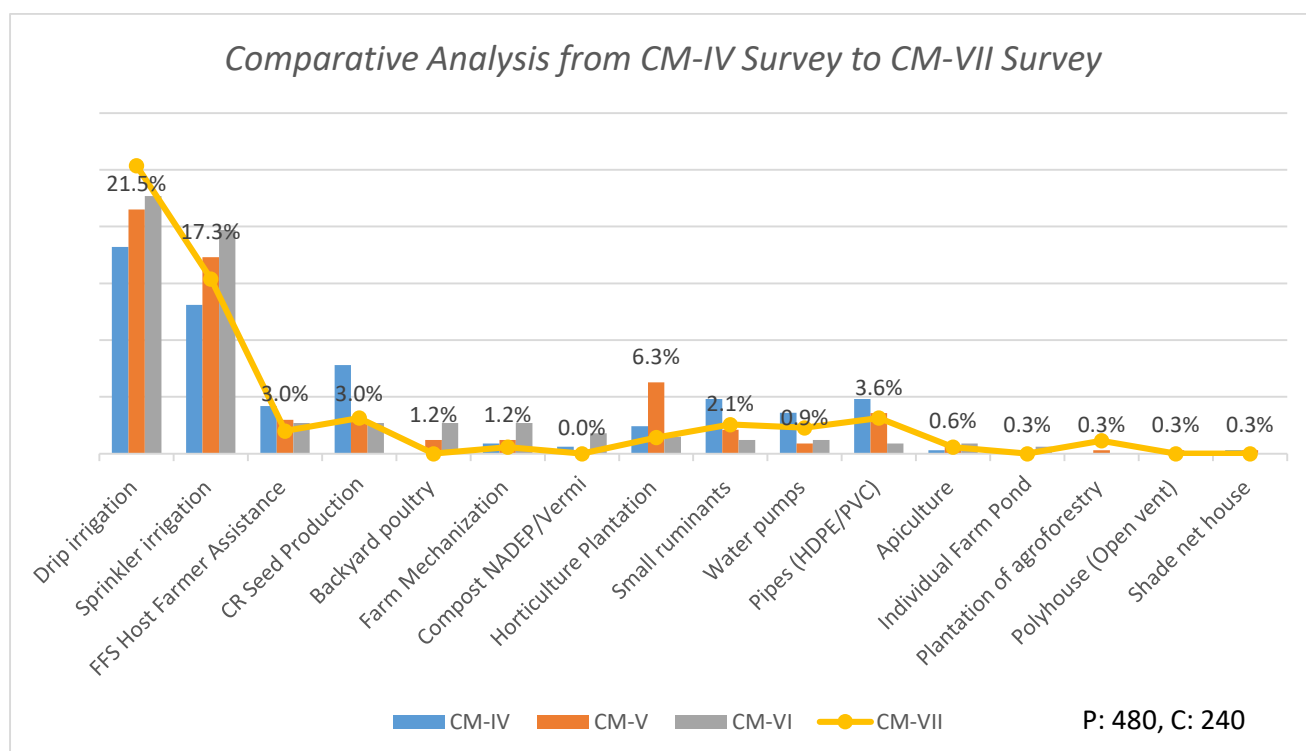


Figure 11: Comparative Analysis from CM-IV Survey to CM-VII Survey

Drip Irrigation: The percentage of farmers availing of drip irrigation benefits increased from 18.2% in CM-IV to 21.5% in CM-V, further to 22.7% in CM-VI and 25.6% in CM-VII. This indicated a steady increase in the adoption of drip irrigation over time.

Sprinkler Irrigation: Similar to drip irrigation, sprinkler irrigation also sees a gradual increase in adoption, though there is a slight dip in the CM-VII phase. Overall, it remains a popular

choice among beneficiaries. The adoption was 13.1% in CM-IV, increased to 17.3% in CM-V and 19.7% in CM-VI respectively. In CM-VII it was 15.4%

FFS Host Farmer Assistance: This program experiences a decline in the number of beneficiaries over the phases, indicating that fewer farmers are receiving assistance from host farmers as the program progresses. It was 4.2% in CM-IV and now reduced to 2.0% in CM-VII.

CR Seed Production: Beneficiaries for CR seed production show a significant drop in the CM-V phase but then increase slightly in the CM-VII phase. It was 7.8% in CM-IV, 3.0% in CM-V, 2.7% in CM-VI and 3.1% in CM-VII.

Backyard Poultry: Backyard poultry starts to gain some traction in CM-VI but then drops back to zero in CM-VII. The adoption was 1.2% in CM-V and 2.7% in CM-VI, while it was 0 in CM-VII.

Farm Mechanization: Farm mechanization sees a moderate increase in beneficiaries during CM-VI, but there's a slight decrease in CM-VII. The adoption was 1.2% in CM-V and increased to 2.7% in CM-VI, showed reduction to 0.6% in CM-VII.

Compost NADEP/Vermi: Beneficiaries for compost NADEP/vermi follow a fluctuating pattern, with no beneficiaries in CM-V and CM-VII. (CM-IV: 0.6%, CM-V: 0.0%, CM-VI: 1.8%, CM-VII: 0.0%)

Horticulture Plantation: Horticulture plantation shows a significant increase in beneficiaries during CM-V, but the numbers drop in the subsequent phases. (CM-IV: 2.4%, CM-V: 6.3%, CM-VI: 1.5%, CM-VII: 1.4%).

Category wise DBT Applications

In CM-VII Survey, out of the total 480 beneficiaries it was recorded that 66.7% from OBC category (in CM-VI it was 58.1%), 42 beneficiaries (8.8%) were from General/Open category (12.7% in CM-VI), 9.4% from Scheduled Caste (7.5% in CM-VI), 5.2% Scheduled Tribe (8.8% in CM-VI) and 7.9% were from Nomadic Tribes (7.7% in CM-VI) and 2.1% mentioned other social categories were benefitted. This data highlighted the social diversity of the beneficiaries and the importance of considering social categories in project design and implementation.

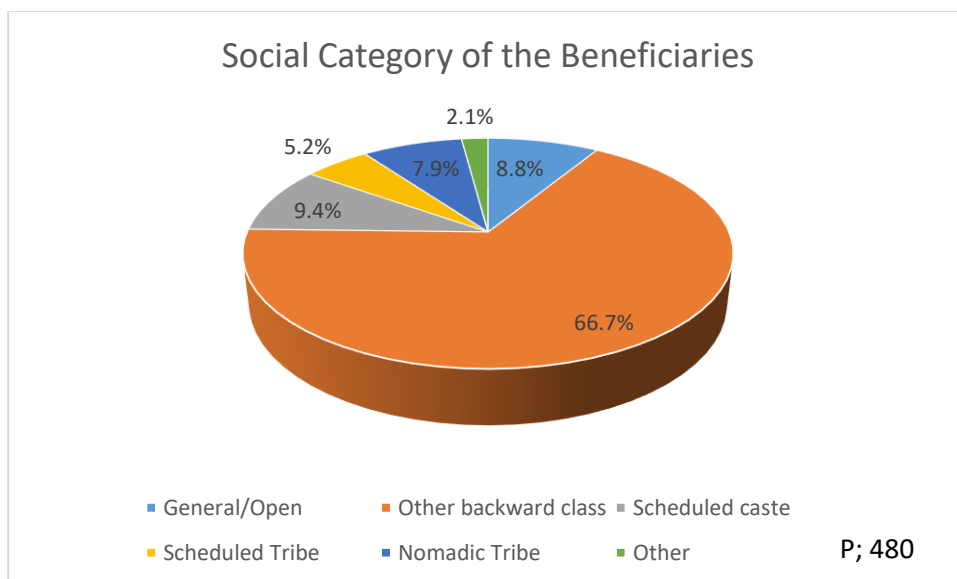


Figure 12: Social Categories of the Beneficiaries

The project may need to adopt strategies that specifically target and address the needs and priorities of different social categories, taking into account their unique cultural, economic, and political contexts. The project may also need to address the historical and structural barriers that limit the participation and empowerment of marginalized social groups, such as Scheduled Castes and Scheduled Tribes, in agricultural activities and decision-making processes.

Trainings Received for CR Technologies

The following table shows the trainings received for Climate Resilient technologies from various sources including from NDKSP/ FFS in CM-VII Survey. In Project areas, out of 437 valid cases 20.6% beneficiaries received training from NDKSP/FFS and 32% from other sources. Likewise about 11% received training for intercropping, 7.3% for seed treatment, 7.1% for Drip/Sprinkler irrigation from NDKSP/FFS.

Table 12: Percent CRT Training/Information from NDKSP and Other Sources

Percent of DBT Beneficiaries received CRT Training/Information from PoCRA and Other Sources							
S.No.	CR technologies	Project area			Control area		
		From any Source	Through NDKSP /FFS	Through other sources	From any Source	Through NDKSP /FFS	Through other sources
	Total (valid cases)	437	437	437	219	219	219
1	Use of improved seed Varieties	32.0	20.6	11.4	20.5	0.0	20.5
2	Intercropping	14.0	10.8	3.2	4.1	0.0	4.1
3	Seed treatment	8.2	7.3	0.9	3.7	0.0	3.7
4	Drip/ Sprinkler Irrigation	7.8	7.1	0.7	4.6	0.0	4.6
5	Broad bed furrow (BBF) method	6.9	6.2	0.7	0.0	0.0	0.0
6	Contour cultivation	5.7	4.6	1.1	0.5	0.0	0.5

7	Integrated Pest Management	4.1	3.9	0.2	0.9	0.0	0.9
8	IPM – Traps (Pheromone Sticky Light)	4.1	3.4	0.7	0.5	0.0	0.5
9	Use of machinery or agricultural tool in farming	3.7	2.7	0.9	0.5	0.0	0.5
10	Seed Germination Test	3.4	3.0	0.5	5.5	0.0	5.5
11	Integrated Nutrient Management	3.0	2.3	0.7	0.9	0.0	0.9
12	Collection of soil sample for soil testing	1.8	1.4	0.5	0.5	0.0	0.5
13	Furrow opening	1.4	0.0	1.4	0.0	0.0	0.0
Note: CRT items with less than 1% of (5) Project area respondents received training from any source, are ignored.							

Adoption of Climate Resilient Technologies

The following table shows the rate of adoption of Climate Resilient technologies in past one year in their own farm in CM-VII Survey. The adoption of CR technologies like use of improved seed varieties was 65% among the 140 beneficiaries who received the training in Project area. Similarly, 70.5% adopted intercropping among 61 beneficiaries who had received training, in seed treatment it was 86.1% from 36 persons who had received training. In Sprinkler and Drip 94% from 34 beneficiaries who had received training. BBF was adopted by 50% from 30 beneficiaries who had received the training. In general, the adoption rates of all technologies were higher in the project area than in the control area, indicating that the intervention or program had a positive impact on the adoption of climate resilient technologies by farmers.

Table 13: Percent of CRT Training Received Beneficiaries who practiced CR Techniques

Percent of CRT Training Received Beneficiaries who practiced CR Techniques in their farm in the last one year					
S. No.	CR technologies	Project Area		Control Area	
		Number received training	Percent practised in last one year	Number received training	Percent practised in last one year
1	Use of improved seed Varieties	140	65.0	45	55.6
2	Intercropping	61	70.5	9	88.9
3	Seed treatment	36	86.1	8	62.5
4	Drip/ Sprinkler Irrigation	34	94.1	10	80.0
5	Cultivation by broad bed furrow (BBF) method	30	50.0	0	0.0
6	Contour cultivation	25	76.0	1	100.0
7	Integrated Pest Management	18	77.8	2	100.0
8	IPM – Traps (Pheromone Sticky Light)	18	83.3	1	100.0
9	Use of machinery or agricultural tool in farming	16	81.3	1	100.0
10	Seed Germination Test	15	86.7	12	66.7
11	Integrated Nutrient Management –	13	100.0	2	0.0
12	Collection of soil sample for soil testing	8	62.5	1	100.0
13	Furrow opening	6	33.3	0	0.0
Note: CRT items with less than 1% of (5) Project area respondents received training from any source, are ignored.					

Usefulness of BBF/Zero Tillage Technology:

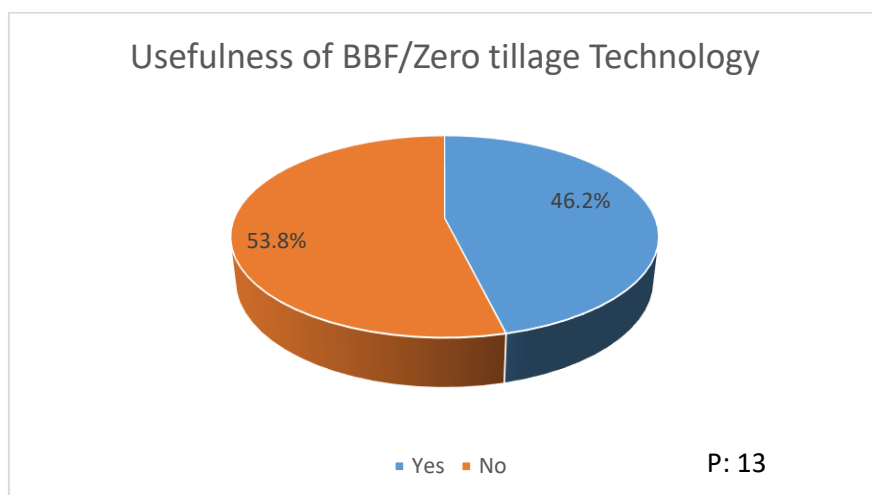


Figure 13: Usefulness of BBF/Zero tillage technology

It was asked to the beneficiaries whether they found the BBF/Zero tillage technology useful in the case of excessive rainfall. From a response from 13 beneficiaries, 6 respondents (46.2%) found the BBF/Zero tillage technology useful in the case of excessive rainfall while 7 respondents (53.8%) did not find the BBF/Zero tillage technology useful in the case of excessive rainfall. The data suggests that there was a relatively balanced split in respondents' opinions regarding the usefulness of BBF/Zero tillage technology in managing excessive rainfall. Approximately half of the respondents (46.2%) reported finding the technology useful in dealing with excessive rainfall, indicating that it may have helped mitigate some of the challenges associated with heavy rainfall. The other half of the respondents (53.8%) did not find the technology useful in this context, suggesting that it may not have been as effective in their specific situations or that other factors played a significant role. In summary, the data indicates a mixed perception among respondents regarding the effectiveness of BBF/Zero tillage technology in managing the impact of excessive rainfall.

Ways BBF/Zero Tillage Technology Helped Protect Crops:

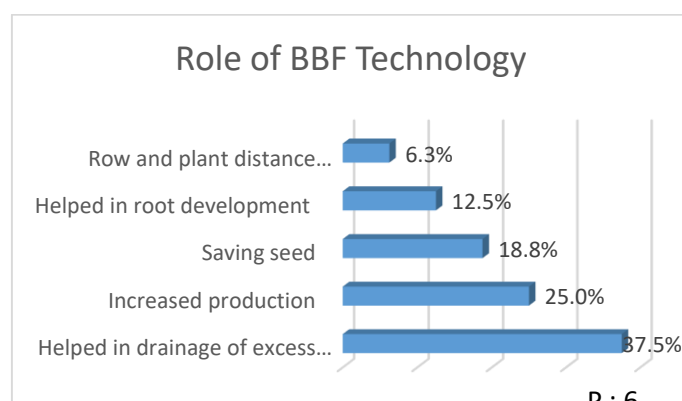


Figure 14: Role of BBF technology

It was also asked how BBF/Zero Tillage technology helped to protect their crops, a total of 16 respondents provided feedback, which are as follows:

Helped in drainage of excess water: 6 respondents (37.5%) reported that the technology aided in the drainage of excess water, which is crucial for preventing waterlogging during heavy rainfall.

Helped in root development by avoiding water stagnation: 2 respondents (12.5%) mentioned that the technology promoted root development by preventing water stagnation, which can be beneficial for crop health.

Saving seed: 3 respondents (18.8%) indicated that BBF/Zero tillage technology helped save seeds, potentially by reducing seed loss due to waterlogging or other factors.

Increased production: 4 respondents (25.0%) reported an increase in crop production as a result of using the technology, suggesting that it positively impacted overall yields.

Row and plant distance maintained: 1 respondent (6.3%) mentioned that the technology helped maintain proper row and plant distances, which can be important for crop spacing and growth.

Respondents provided a variety of ways in which BBF/Zero tillage technology helped protect their crops. Drainage of excess water and prevention of water stagnation were highlighted as significant benefits, which is especially important in areas prone to heavy rainfall. Some respondents also noted the positive impact on seed conservation and increased crop production, indicating that the technology may have multiple advantages for crop management. In summary, the data suggests that BBF/Zero tillage technology has been perceived as beneficial in protecting crops by addressing issues related to water management, root development, seed conservation, and overall production.

Challenges Faced in Using BBF Technology:

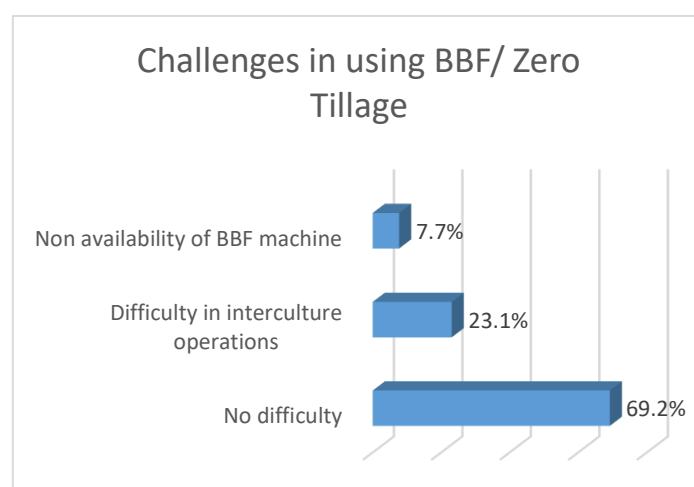


Figure 15: Challenges in using BBF/Zero tillage technology

P: 13 (Multiple responses)

There were a total of 13 respondents who provided feedback on the challenges they encountered while using BBF/Zero tillage technology. 9 respondents (69.2%) reported that they did not face any difficulty while using BBF/Zero tillage technology, indicating a smooth experience with its implementation and 1 respondent (7.7%) mentioned that the non-availability of the BBF machine was a challenge. This suggests that access to the necessary equipment may be a limiting factor for some farmers. While, 3 respondents (23.1%) indicated that they faced difficulties in carrying out interculture operations while using BBF/Zero tillage technology. The majority of respondents did not encounter any difficulty while using BBF/Zero tillage technology, suggesting that it is generally well-received and user-friendly. Some respondents mentioned difficulties in performing interculture operations, which could be an area where additional support or training may be beneficial. In summary, the data suggests that while BBF/Zero tillage technology was generally perceived positively, there are still some challenges related to equipment availability and specific farming operations that need to be addressed to ensure its effective adoption.

Area Under BBF Technology:

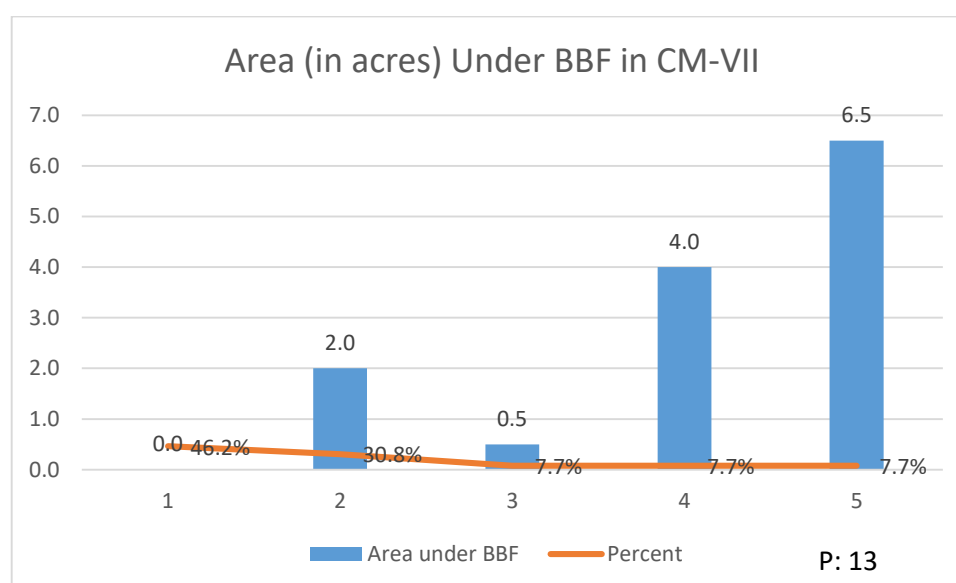


Figure 16: Area (in acres) under BBF in CM-VII

There were a total of 13 respondents who provided information on the area of land they have adopted for BBF technology.

- 0.5 acres:** 1 respondent (7.7%) reported having 0.5 acres of land under BBF/Zero tillage.
- 2.0 acres:** 4 respondents (30.8%) mentioned having 2.0 acres of land under BBF/Zero tillage.
- 4.0 acres:** 1 respondent (7.7%) reported having 4.0 acres of land under BBF/Zero tillage.

4. **6.5 acres:** 1 respondent (7.7%) mentioned having 6.5 acres of land under BBF/Zero tillage.
5. **0.0 acres:** 6 respondents (46.2%) reported that they have no land under BBF/Zero tillage, indicating that they may not have adopted this technology on their farms.

The majority of respondents who provided information have adopted BBF/Zero tillage on a limited scale, with 0.5 to 4.0 acres of land. Six respondents reported having no land under BBF/Zero tillage, indicating that this technology may not be widely adopted among the surveyed group. The data suggests that BBF/Zero tillage adoption varies among respondents, with some having relatively small areas under this technology. The data reflects the varying degrees of adoption of BBF/Zero tillage, with some farmers using it on a limited scale while others have not adopted it at all. This could be influenced by factors such as awareness, availability of equipment, and suitability of the technology for specific farming practices.

Crops Grown Under BBF Technology:

There were a total of 9 respondents who provided information about the crops they have grown using BBF/Zero technology.

1. **Cotton:** 1 respondent (11.1%) reported growing cotton using BBF technology.
2. **Pigeon Pea:** 1 respondent (11.1%) mentioned growing pigeon pea.
3. **Soybean:** 3 respondents (33.3%) stated that they have grown soybean using BBF technology.
4. **Chickpea:** 2 respondents (22.2%) reported cultivating chickpea.
5. **Wheat:** 1 respondent (11.1%) mentioned growing wheat.
6. **Other:** 1 respondent (11.1%) reported growing another unspecified crop using BBF technology.

Soybean is the most commonly grown crop using BBF technology, with 33.3% of respondents adopting this practice for soybean cultivation. Chickpea and cotton were also mentioned by respondents as crops grown using BBF technology. The data indicates that BBF technology was applied to a variety of crops, suggesting its adaptability across different crop types. The adoption of this technology for different crops may be influenced by local agricultural practices and preferences.

Benefits from Climate Resilient Technologies:

Beneficiaries were asked whether they have benefited from the climate resilient technologies they adopted. From a total of 147 respondents who provided information about their experience with climate-resilient technologies, 110 respondents (74.8%) indicated that they have benefited from the climate-resilient technologies they adopted, while 37 respondents (25.2%) reported that they have not benefited from the climate-resilient technologies they adopted. A significant majority of respondents (nearly three-quarters) reported that they have

benefited from the climate-resilient technologies they adopted. The data suggests that a substantial portion of respondents found value in the climate-resilient technologies they adopted, likely contributing to improved agricultural resilience in the face of changing climatic conditions.

DBT Mechanism under PoCRA

As part of the project, to transfer the approved grants directly to the Aadhaar linked bank account of the beneficiary, PoCRA had adopted the Direct Benefit Transfer (DBT) mechanism. Under this functionality, beneficiary register himself on the DBT portal of PoCRA through his Aadhaar number and apply for the available activities from the platform. Total 207 (64 pre sanctioned & 143 subsidy paid) DBT beneficiaries were surveyed as part of CM-VI.

Each application under DBT are processed through the approval mechanism after which payment is processed through Aadhaar Based Payment System (ABPS) which gets directly credited to the Aadhaar linked bank account of the beneficiary. DBT process is highlighted in the figure below (Source: PMU).

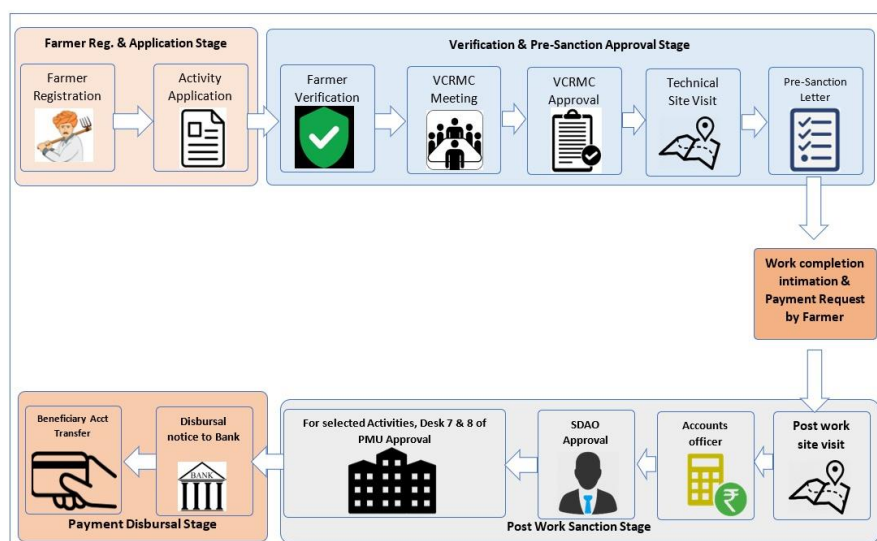


Figure 17: DBT Flow Chart

Responses received from beneficiary survey on DBT activities are discussed below.

Individual DBT Benefits

For the Concurrent Monitoring VII Survey of DBT beneficiaries, a sample of 142 beneficiaries who received subsidy (matching grant) and 65 beneficiaries who received pre-sanction. For this purpose, a list of beneficiaries in the selected 32 villages was provided by the PMU. It is

to be noted that, as per the direction of the PMU, a beneficiary was considered for only one benefit (even if applied for and/or received subsidy for more than one benefit). In the next step, the list was sorted by type of benefit and the required sample was selected by applying systematic random sampling method. As such the sample may not be considered as a representative sample but it would throw some light on the broad nature of the benefits.

Table 14: DBT benefits applied by the farmers (as per sample selection)

DBT benefits applied by Farmers (as per sample selection)	Frequency	
	Total	Percent
Total	207	100.0%
Drip irrigation	89	43.0%
Sprinkler irrigation	54	26.1%
Pipes (HDPE/PVC)	11	5.3%
Water pumps	8	3.9%
Construction of Individual Farm Pond/farm pond lining	2	1.0%
Production of foundation & certified seeds of climate resilient varieties	11	5.3%
Plantation of Horticulture Crops	5	2.4%
Plantation of agroforestry	4	1.9%
Construction of open dug well	2	1.0%
Apiculture	2	1.0%
Small ruminants	9	4.3%
Farm Mechanization	2	1.0%
Farm Pond lining	1	0.5%
FFS Host Farmer Assistance	7	3.4%

There were a total of 207 respondents who applied for or received individual benefits, 89 respondents (43.0%) applied for or received benefits related to drip irrigation systems, 54 respondents (26.1%) reported applying for or receiving benefits for sprinkler irrigation, 11 respondents (5.3%) mentioned applying for or receiving benefits related to the production of foundation and certified seeds of climate-resilient crop varieties, similarly 11 respondents (5.3%) mentioned receiving benefits related to the provision of pipes, specifically HDPE/PVC pipes, 9 respondents (4.3%) reported applying for or receiving benefits related to small ruminants, such as goats or sheep, 8 respondents (3.9%) applied for or received benefits related to water pumps, 7 respondents (3.4%) applied for or received assistance related to hosting Farmer Field School sessions, 5 respondents (2.4%) applied for or received benefits for horticulture crop plantation, 4 respondents (1.9%) reported receiving assistance for agroforestry plantation, 2 respondents (1.0%) reported receiving assistance for constructing individual farm ponds or lining existing ponds. While, 2 respondents (1.0%) applied for or received benefits related to open dug well construction. While 2 (1.0%) each respondent(s)

had received benefits from Apiculture and Farm Mechanization, and 1 respondent (0.5%) mentioned receiving assistance specifically for farm pond lining.

Drip irrigation and sprinkler irrigation are the most commonly applied for or received individual benefits among the surveyed respondents, indicating a strong focus on improving irrigation practices. Other benefits include infrastructure improvements (e.g., pipes and water pumps), crop-related support (e.g., seeds and horticulture plantation), and livestock-related assistance (e.g., small ruminants and apiculture). In summary, the data shows that respondents have applied for or received various individual benefits, reflecting efforts to promote sustainable and climate-resilient agricultural practices in the surveyed areas. The distribution of benefits aligns with local agricultural needs and priorities.

Key Reasons for Applying for Benefits:

There were a total of 359 respondents who provided reasons for applying for individual benefits. The key reasons for applying for individual benefits. Here's the analysis:

Table 15: Key reasons for applying for the benefits

S. No.	Key reasons for applying for the benefits	Frequency	
		Total	Percent
	Total	359	100.0%
1	It will help to increase water supply for Agriculture	144	40.1%
2	It will help to increase my agriculture production and hence my income	146	40.7%
3	These practices are climate friendly	29	8.1%
4	No specific reason, was suggested by my friends/family	5	1.4%
5	Process of Application is Simple	17	4.7%
6	Subsidy is received quickly	16	4.5%
7	Others	2	0.6%

- **Increase Water Supply for Agriculture:** 144 respondents (40.1%) mentioned that one of the key reasons for applying for these benefits is to increase water supply for agricultural purposes. This indicates a focus on improving irrigation infrastructure to enhance water availability.
- **Increase Agricultural Production and Income:** 146 respondents (40.7%) cited the desire to increase their agricultural production and income as a primary motivation for applying for benefits. This underscores the economic aspect of agricultural interventions.
- **Climate-Friendly Practices:** 29 respondents (8.1%) noted that they applied for benefits because the practices being promoted are climate-friendly. This suggests an awareness of the importance of sustainable and climate-resilient agriculture.
- **Recommendation by Friends/Family:** 5 respondents (1.4%) mentioned that they applied for benefits based on recommendations from friends or family members.

- **Simple Application Process:** 17 respondents (4.7%) reported that they found the application process to be simple, which may have encouraged their participation.
- **Quick Subsidy Receipt:** 16 respondents (4.5%) applied for benefits because they expected to receive subsidies quickly.

The most common reasons for applying for individual benefits include the desire to increase water availability for agriculture and the goal of boosting agricultural production and income. A smaller but significant proportion of respondents mentioned the climate-friendly nature of the practices as a motivating factor. Some respondents applied for benefits based on recommendations from their social networks (friends/family), while others appreciated the simplicity of the application process and the prospect of receiving subsidies quickly. In summary, the data suggests that respondents have diverse motivations for applying for individual benefits, including economic considerations, environmental concerns, and ease of access to support programs. These motivations align with the goals of sustainable and resilient agricultural practices.

Sources of Motivation:

The beneficiaries were asked about the individuals or groups who motivated respondents to apply for the benefit. Out of a total of 321 respondents 156 (48.6%) reported that they were self-motivated to apply for the benefit. This indicates a strong individual initiative in seeking agricultural benefits. 25 respondents (7.8%) mentioned that family members within their households played a motivating role in applying for the benefit. This suggests that family support is a significant factor in agricultural decisions. 20 respondents (6.2%) were motivated by members of the Village Climate Resilience Management Committee (VCRMC). This indicates the influence and credibility of these committees in promoting agricultural practices. 6 respondents (1.9%) mentioned that friends or neighbours motivated them to apply for the benefit. This highlights the importance of peer networks in disseminating information and encouraging participation. 7 respondents (2.2%) cited the FFS Facilitator or Coordinator as a motivating factor. This underscores the role of agricultural extension workers in promoting agricultural practices. 50 respondents (15.6%) were motivated by Cluster Assistants, indicating the importance of local agricultural extension personnel. 51 respondents (15.9%) reported that Agricultural Assistants motivated them to apply for the benefit. This suggests the influence of government agricultural agencies in promoting agricultural interventions while 5 respondents (1.6%) mentioned *Krusha Tai* as a source of motivation.

Table 16: Motivation to apply for the benefit

S.No.	Motivated to apply for the benefit	Frequency	
		Total	Percent
	Total	321	100.0%
1	Self	156	48.6%
2	Agricultural Assistant	51	15.9%
3	Cluster Assistant	50	15.6%
4	Family members of the household	25	7.8%
5	VCRMC members	20	6.2%
6	FFS Facilitator/Coordinator	7	2.2%
7	Friends or neighbours	6	1.9%
8	<i>Krushai Tai</i>	5	1.6%
9	Others	1	0.3%

Self-motivation was the most prevalent source of motivation, with nearly half of the respondents indicating that they applied for the benefit based on their own initiative and interest. Family members within the household, VCRMC members, and various agricultural extension workers, including Cluster Assistants and Agricultural Assistants, also played important roles in motivating respondents to apply for the benefit. Friends, neighbours, and *Krushai Tai*, while less commonly mentioned, still contributed to motivating some respondents to participate in agricultural programs. In summary, the data demonstrates that motivation to apply for agricultural benefits comes from various sources, including individual drive, family support, community committees, and agricultural extension workers. These multiple sources of motivation reflect the collaborative and community-oriented nature of NDKSP program.

Methods of Application:

There were a total of 207 respondents who provided information about how they applied for the activity.

Table 17: Method of Application

S.No.	Method of Application	Frequency	
		Total	Percent
	Total	207	100.0%
1	Self /family members	85	41.1%
2	With help of cluster assistant	62	30.0%
3	With help of e-sewa Kendra	25	12.1%
4	With help of VCRMC member	21	10.1%
5	With help of friends/neighbours	12	5.8%
6	With help of Gram Panchayat operator/members	2	1.0%

- **Self/Family Members:** 85 respondents (41.1%) reported that they applied for the activity independently or with the help of family members. This indicates a significant degree of self-reliance and family involvement in the application process.
- **With Help of Cluster Assistant:** 62 respondents (30.0%) mentioned that they applied for the activity with the assistance of Cluster Assistants. This underscores the role of local agricultural extension personnel in facilitating applications.
- **With Help of Friends/Neighbours:** 12 respondents (5.8%) stated that they sought assistance from friends or neighbours when applying for the activity. This highlights the importance of peer networks in the application process.
- **With Help of VCRMC Member:** 21 respondents (10.1%) reported that they received help from members of the VCRMC. This indicates the involvement of community committees in guiding the application process.
- **With Help of Gram Panchayat Operator/Members:** 2 respondents (1.0%) mentioned that they sought assistance from Gram Panchayat operators or members.
- **With Help of e-Sewa Kendra:** 25 respondents (12.1%) applied for the activity with the assistance of e-Sewa Kendra. This suggests the use of digital platforms for application purposes.

Self-application and family involvement are common methods, with a significant proportion of respondents applying independently or with their family's assistance. Cluster Assistants, as local agricultural extension workers, play a crucial role in facilitating the application process for many respondents. Friends, neighbours, VCRMC members, Gram Panchayat operators/members, and e-Sewa Kendra are also important sources of support for applicants, though to varying degrees. The data shows that there are multiple channels through which individuals applied for the activity, ranging from self-application to seeking assistance from various community and government sources. This diversity of application methods reflects the collaborative nature of agricultural development initiatives.

Methods of Financing:

The following table provides insights into how respondents arranged the money to purchase or construct the asset. There were a total of 167 respondents who provided information on how they arranged the funds for the asset.

Table 18: Method of Finance

S.No.	Methods of Finance	Frequency	
		Total	Percent
	Total	167	100.0%
1	Used own funds	152	91.0%
2	Took loan from friends/extended family members/neighbours	8	4.8%
3	Took loan from money lender	4	2.4%
4	Took loan from bank/micro finance companies	1	0.6%
6	Others	2	1.2%

Used Own Funds: The majority of respondents, 152 out of 167 (91.0%), reported that they used their own funds to purchase or construct the asset. This indicates a high degree of self-financing and self-reliance among the respondents.

Took Loan from Friends/Extended Family/Neighbours: Eight respondents (4.8%) mentioned that they borrowed funds from friends, extended family members, or neighbours. Borrowing from within the community is a common informal financing method.

Took Loan from Money Lender: Four respondents (2.4%) reported that they took a loan from a money lender. Money lenders often provide quick access to funds, but the terms may involve higher interest rates.

Took Loan from Bank/Microfinance Companies: One respondent (0.6%) indicated that they took a loan from a bank or microfinance company. This suggests that formal financial institutions were less commonly used for financing.

Other Methods: Two respondents (1.2%) mentioned "other" methods of financing, which could include sources not explicitly listed in the options provided.

Self-financing was the predominant method of arranging funds for the asset, with a large majority of respondents using their own resources. Informal sources of loans from friends, family, and neighbours are utilized by a smaller but notable proportion of respondents. Borrowing from money lenders is less common, while formal financial institutions like banks and microfinance companies are used by only a few respondents. The data illustrates that most respondents relied on their own financial resources to acquire the asset, and informal sources of loans played a role in financing for a minority of respondents. This reflects a mix of financial strategies used by individuals based on their circumstances and available resources.

Key Reasons for Not Initiating the Activity:

The key reasons on why some respondents received pre-sanction but did not start the work or procurement of their activity. There were a total of 31 respondents who provided reasons for not initiating the activity despite receiving pre-sanction.

Have Other Expenditure Priorities Currently: Eight respondents (25.8%) mentioned having other expenditure priorities at the moment. This suggests that they may have financial commitments or expenses that take precedence over the planned activity.

Do Not Have Money to Invest in This Activity: Seven respondents (22.6%) reported not having sufficient funds to invest in the planned activity. Financial constraints appear to be a significant barrier for this group.

Rejected/Cancelled Activity: Four respondents (12.9%) indicated that the activity may have been rejected or cancelled, potentially due to project or administrative reasons.

Lack of Community Support to the Activity: Four respondents (12.9%) cited a lack of community support as a reason for not initiating the activity. This suggests that community cooperation and participation may be essential for certain activities.

Currently Arranging Funds to Initiate This Activity: Three respondents (9.7%) mentioned that they are in the process of arranging funds to start the activity. This indicates ongoing efforts to secure financing.

Other Reasons: One respondent (3.2%) provided an unspecified "other" reason for not initiating the activity.

Not Interested in This Activity Anymore: One respondent (3.2%) expressed a lack of interest in the planned activity, indicating a change in their preferences or priorities.

Activity on Hold: One respondent (3.2%) reported that the activity is on hold, suggesting a temporary delay.

Post Sanction Unable to Access Raw Material: One respondent (3.2%) mentioned being unable to access raw materials after receiving the sanction.

Initial Investment Is Too High: One respondent (3.2%) stated that the initial investment required for the activity was too high, which may have deterred them from proceeding.

It may be concluded that:

- Financial constraints, including other expenditure priorities and a lack of funds, appear to be significant barriers to initiating the planned activities.
- Administrative factors such as rejection or cancellation of the activity and community support also influence the initiation of activities.
- Some respondents are actively working on arranging funds, suggesting a potential willingness to proceed once financing is secured.
- Individual preferences and interest in the activity can also impact the decision to start or not start the planned work.

In summary, the data highlights various factors contributing to the delay or non-initiation of planned activities among the respondents, including financial challenges, administrative decisions, and individual preferences.

Seed Production

Seed production is an important intervention in PoCRA and about 5.3% beneficiaries from Project area availed this benefit under DBT. Seed production in climate resilient agriculture represents the foundation upon which agricultural systems can thrive amidst the mounting environmental pressures. Climate resilient seed production not only fosters agricultural stability but also serves as a powerful tool for climate change mitigation and adaptation. By selecting and disseminating seeds that efficiently sequester carbon dioxide, improve soil health, and conserve water resources, seed production becomes an integral part of sustainable farming practices. These climate-adaptive seeds contribute to carbon sequestration, thus aiding in the fight against global warming while ensuring the long-term viability of agricultural landscapes.

This intervention of seed production was availed by 8 beneficiaries in Project areas and 5 from Control areas. It was observed that in CM-VII Survey, Climate resilient seed production was carried out in Soybean (62.5 %) and Chickpea (37.5%) each, while in Control areas Soybean was taken by 80% and Chickpea by 20% beneficiaries.

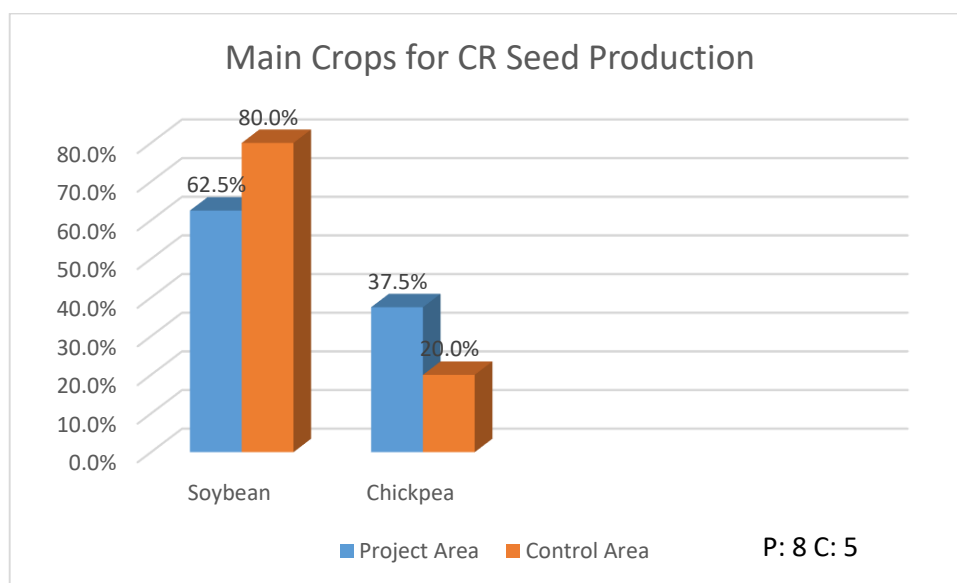


Figure 18: Main crops for CR Seed Production

Source of Seed Purchased

The CM-VII survey data indicated that In the project area, 62.5% of respondents purchased seeds from Mahabeej, 12.5% from the National Seed Corporation, and 25.0% from Farmer Producer Companies. In the control area, 60.0% purchased seeds from Mahabeej, 20.0% from the National Seed Corporation, and 20.0% reported other sources for seed purchase. It's notable that there were no respondents in the control area who purchased seeds from Farmer Producer Companies.

Training for Seed Production:

Out of the total respondents, 25.0% (2 out of 8) have received training for seed production (this activity), while 75.0% (6 out of 8) have not received such training. While in case of Control area out of the total respondents, 20.0% (1 out of 5) have received training for seed production (this activity), while 80.0% (4 out of 5) have not received such training.

As climate patterns change, having access to locally produced seeds that are adapted to specific climate conditions becomes increasingly important. Seed production training can help communities become more resilient to the effects of climate change. Training can equip farmers with the knowledge and skills needed to produce high-quality seeds. This can result in seeds that have better germination rates, disease resistance, and overall health, leading to more productive crops. Farmers who have received training in seed production are more likely to produce and use superior seeds, which can translate into increased agricultural productivity. Moreover, Training in seed production reduces dependency on external seed suppliers, making farmers more self-reliant. This is particularly beneficial in remote or economically disadvantaged areas. Proper seed production practices can align with principles of sustainable agriculture. Training can emphasize sustainable and environmentally friendly approaches to seed production.

Producing Climate Resilient Seeds:

It was also enquired if the seed they are producing is climate resilient or not, in Project areas, 75.0% of farmers in the project area indicate that the seed they are producing is climate resilient, while 25.0% of farmers in the project area state that the seed they are producing is not climate resilient. In case of Control area, 80.0% of farmers in the control area claim that the seed they are producing is climate resilient, while 20.0% of farmers in the control area report that the seed they are producing is not climate resilient. Overall, a significant majority of farmers in both the project area and the control area believe that the seeds they are producing have climate resilience. This suggests that farmers in these regions may be adopting practices and seed varieties that are better suited to withstand the changing climatic conditions and environmental challenges they face. However, it's important to note that the perception of climate resilience may vary among farmers, and the actual resilience of the seeds should be scientifically evaluated to confirm their suitability for the prevailing climate conditions.

Tie-up for Selling of Products:

It was recorded that 50.0% of farmers in the project area have a tie-up with Mahabeej to sell their seeds, 37.5% of farmers are associated with Farmer Producer Companies to sell their seeds and 12.5% of farmers have tie-ups with other organizations for seed sales. While in

Control Area, 60.0% of farmers have a tie-up with Mahabeej to sell their seeds and 40.0% of farmers have tie-ups with other organizations for seed sales. This suggests that Mahabeej is a significant organization with which farmers in both areas have tie-ups to sell their seeds. Additionally, a notable percentage of farmers in the project area have tie-ups with Farmer Producer Companies, while some in the control area have tie-ups with other organizations for seed sales. These tie-ups can help farmers access markets and sell their seeds more effectively, which can have positive economic implications for them.

A3: Promoting efficient and sustainable use of water for agriculture

The component focuses on activities to enhance security by maximizing the use of surface water for agriculture, managing groundwater resources in a sustainable manner, retaining and enhancing soil moisture and enhancing water use efficiency and water productivity. Feedback of beneficiaries had been obtained on irrigation status, activities under DBT to enhance water security, community and NRM activities.

Availability of Irrigation Source:

As a part of questionnaire it was asked to the respondents whether they had a source of irrigation on the land that they cultivate. In Project area, out of 321 respondents, 320 (99.7%) answered that they had a source of irrigation on the land that they cultivate. This suggests that the overwhelming majority of the surveyed respondents have access to irrigation facilities for their agricultural activities. Only 1 respondent (0.3%) indicated that they do not have a source of irrigation on their cultivated land. This is an extremely low percentage, suggesting that almost all surveyed respondents have access to irrigation.

While in case of Control area, out of total of 170 respondents, 168 (98.8%) indicated that they had a source of irrigation for their agricultural activities. While, only 2 respondents (1.2%) answered that they do not have a source of irrigation for their agricultural activities.

Sources of Irrigation:

In response to question about the sources of irrigation they use to cultivate their land, in Project area (P:335) the most common source of irrigation reported by respondents was "Dug Well," with 249 respondents (74.3%) indicating that they use this source for irrigation. Dug wells are manually excavated wells that tap into groundwater. The second most common source was "Borewell," with 49 respondents (14.6%) using borewells for irrigation. Borewells are deep wells that access groundwater using mechanical drilling, 11 respondents (3.3%) reported using rivers as a source of irrigation, while 10 respondents (3.0%) reported using farm ponds for irrigation. It was also recorded that 9 respondents (2.7%) indicated using earthen dams or check dams for irrigation. These structures are built to capture and store rainwater and 6 respondents (1.8%) reported using other sources of irrigation, which were not specified in the data. Only 1 respondent (0.3%) mentioned using canals as a source of irrigation. In summary, the data provides insights into the diverse sources of irrigation used by respondents, with a strong reliance on groundwater sources such as dug wells and borewells.

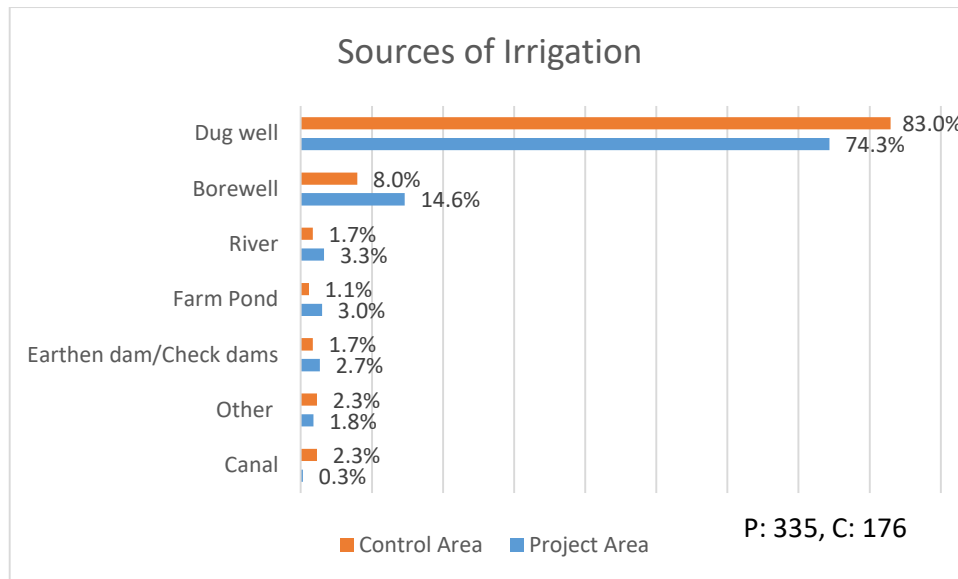


Figure 19: Sources of Irrigation

Similar to the Project area, the majority of respondents in Control areas (C:176) rely on groundwater sources for irrigation, with dug wells (83.0%) being the most common source. A smaller percentage of respondents in control areas also utilize surface water sources, including canals (2.3%), rivers (1.7%), and rainwater harvesting structures like earthen dams/check dams (1.7%). Borewells are used by a notable proportion (8.0%) of respondents in control areas for irrigation. Farm ponds and "other" sources of irrigation are less commonly mentioned in control areas.

Drip Irrigation

Frequency of Drip Irrigation Usage:

The below graph shows the insights into the frequency of usage of Drip irrigation assets among respondents.

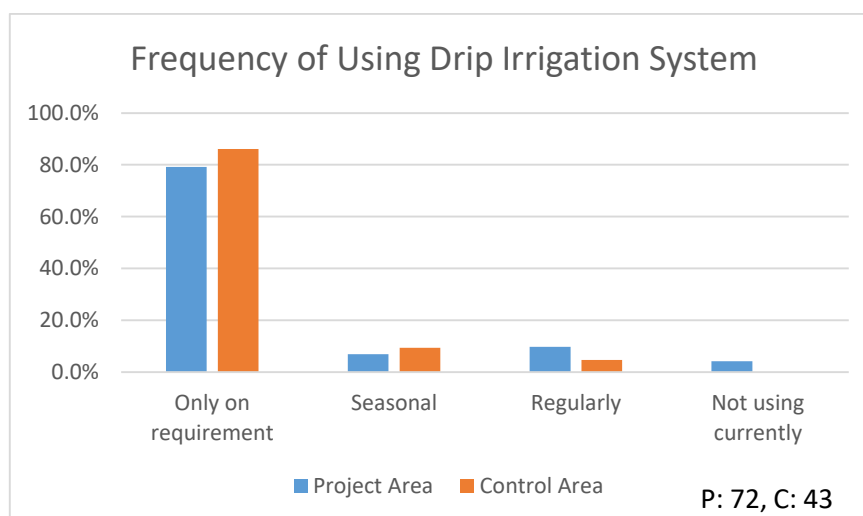


Figure 20: Frequency of use of Drip Irrigation

There were a total of 72 beneficiaries in Project area and 43 in Control area who provided information on the frequency of using Drip irrigation assets. The majority of respondents tend to use Drip irrigation assets based on the specific needs of their crops or agricultural practices, indicating a flexible approach to irrigation management. Seasonal usage suggests that Drip irrigation may be more prevalent during certain periods of the year when water conservation and precise irrigation are crucial. A smaller portion of respondents reported using Drip irrigation regularly, indicating consistent adoption of this technology. The data reflects variations in the frequency of Drip irrigation asset usage among respondents, with many using it on an as-needed basis. This adaptable approach aligns with efficient water management and resource optimization in agriculture.

Area Covered by Drip Irrigation System:

As per CM-VII questionnaire data on distribution of land area (in acres) covered by Drip Irrigation System was collected from the beneficiaries. There were a total of 69 beneficiaries from Project and 43 from Control area who provided information on the land area covered by the Drip Irrigation System. In case of Project area the most common land area covered by the Drip Irrigation System, with 14 respondents (20.3%) indicating that they have 3.0 acres of land under drip irrigation. The second most common category was 4.0 acres, with 13 respondents (18.8%) having this land area covered by drip irrigation. Eleven respondents (15.9%) reported having 2.0 acres of land under drip irrigation, Six respondents (8.7%) mentioned having 5.0 acres of land covered by drip irrigation. 4 respondents (5.8%) reported to have covered 1.5 and 2.5 Acres by drip irrigation. Some respondents claimed to have covered area from 4.0 to 10.0 acres of land with drip irrigation (ranging from 1.4% to 2.9%).

While in case of Control area the most common land area covered by drip irrigation was 2.0 acres, with 10 respondents (23.3%) indicating that they have this amount of land under drip irrigation. Another significant group of respondents reported having 4.0 acres of land (10 respondents, 23.3%) covered by drip irrigation. Five respondents (11.6%) mentioned having 3.0 acres of land under drip irrigation. Four respondents (9.3%) reported having 5.0 acres of land covered by drip irrigation. The data reveals a diverse distribution of land areas covered by the Drip Irrigation System among respondents.

Crops Irrigated with Drip Irrigation:

In Project areas, the majority of respondents (84.2%) reported using drip irrigation for cultivating cotton. This indicates that cotton is the most common crop for which drip irrigation technology is employed among the surveyed population. A smaller proportion of respondents (7.9%) mentioned cultivating pigeon pea using drip irrigation. While not as prevalent as cotton, pigeon pea cultivation using drip irrigation is still notable among the respondents. Soybean,

Chickpea, Turmeric were mentioned by a very small percentage of respondents (ranging from 1.3% to 1.3%) as being cultivated using drip irrigation. These crops are less commonly associated with drip irrigation in the surveyed area. A portion of respondents (3.9%) indicated that they do not use drip irrigation for cultivating any specific crop, suggesting that they may use other irrigation methods or not engage in agriculture.

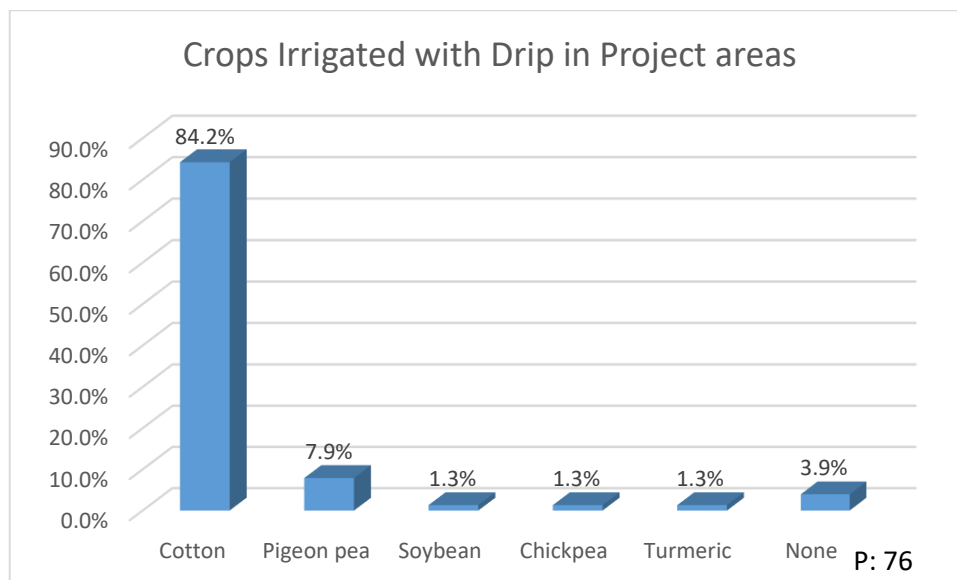


Figure 21: Crops irrigated with Drip in Project areas

In case of Control areas, the majority of respondents reported cultivating cotton (79.2%) using drip irrigation. Cotton appears to be the most common crop for which drip irrigation technology is employed among the surveyed population. This could be due to the specific water requirements and benefits of drip irrigation for cotton farming. A small percentage of respondents mentioned cultivating soybean (2.1%) using drip irrigation. While not as prevalent as cotton, some respondents have adopted drip irrigation for soybean cultivation. Sorghum (2.1%) and Millet (2.1%): Sorghum (2.1%) and millet (2.1%) were also mentioned by a small percentage of respondents as crops cultivated using drip irrigation. These are drought-resistant grains, and drip irrigation might be used to efficiently manage water resources for these crops. Maize (4.2%) was mentioned by a moderate percentage of respondents. Drip irrigation can be beneficial for maize farming, especially in areas with water scarcity. Some respondents mentioned "other" (6.3%) crops, indicating a variety of crops beyond those specifically listed in the survey. These could include fruits, vegetables, or other specialty crops.

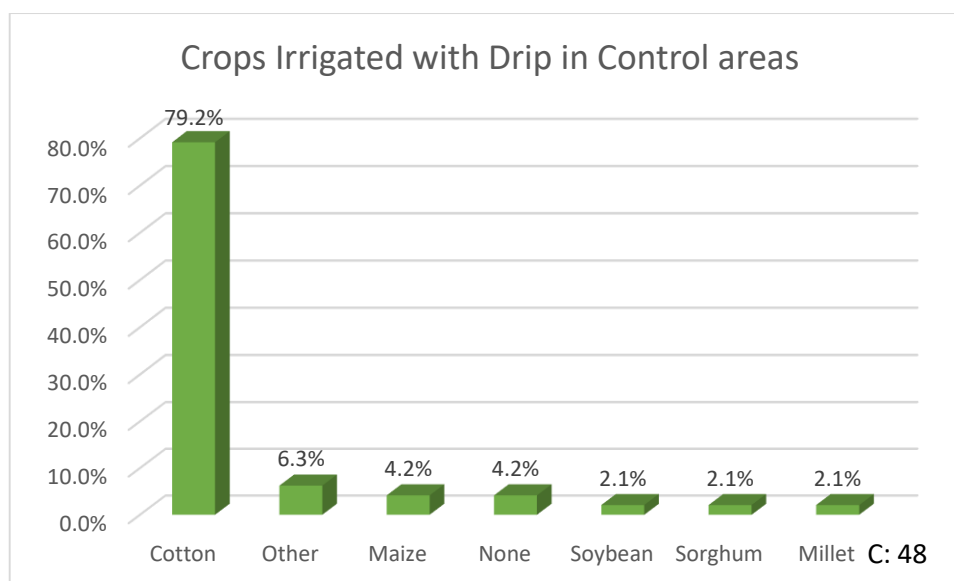


Figure 22: Crops irrigated with Drip in Control area

Cotton was the dominant crop cultivated using drip irrigation among the surveyed population, likely due to the efficiency and water-saving benefits of drip irrigation for cotton farming.

Benefits of using Drip Irrigation System:

The benefits experienced by beneficiaries (P:211) as a result of using drip irrigation. Here's the analysis:

Increase in Income (33.2%): The most commonly reported benefit of using drip irrigation is an increase in income. Drip irrigation is known for its water efficiency and can lead to higher yields, which, in turn, can translate into higher income for farmers.

Increase in Production (26.5%): Many respondents mentioned that they have experienced an increase in agricultural production due to drip irrigation. The precise control of water delivery to plants can lead to improved crop growth and yields.

Increased Availability of Water for Protected Irrigation (15.6%): Drip irrigation systems can provide a more consistent and reliable water supply to crops, even during dry spells or water scarcity periods. This benefit is particularly valuable for protected or controlled environment agriculture.

Efficient Use of Water (8.1%): Respondents also reported that drip irrigation helps in the efficient utilization of water resources. It allows for precise water application directly to the root zone of plants, minimizing water wastage.

Change in Cropping Pattern (4.7%): Some respondents mentioned a change in their cropping pattern as a benefit. Drip irrigation may enable farmers to diversify their crops or grow crops that are more water-sensitive.

Increase in Quality of Agricultural Produce (3.8%): Improved water management through drip irrigation can lead to better-quality agricultural produce. This can be especially important for crops that are sensitive to moisture levels.

Saving in Labour Cost (4.3%): A few respondents indicated that they have saved on labour costs as a result of using drip irrigation. Drip systems can automate the watering process to some extent, reducing the need for manual labour.

Availability of Water During Dry Spells (1.4%): Some respondents mentioned that drip irrigation helps ensure the availability of water to crops even during dry spells, which can be crucial for crop survival. This makes it most climate resilient intervention.

Increase in Area of Cultivation During *Kharif* Season (1.4%): A small percentage of respondents reported an increase in the area of cultivation, particularly during the *Kharif* season, which could be attributed to the benefits of drip irrigation.

Not Benefitted till Now (0.9%): A very small number of respondents stated that they have not yet experienced significant benefits from drip irrigation.

Overall, the data from CM-VII Survey suggests that drip irrigation has had a positive impact on the income, production, and water management practices of many respondents. These benefits align with the known advantages of drip irrigation in Climate Resilience of Agriculture, which include water efficiency, increased yields, and improved crop quality.

Sprinkler System

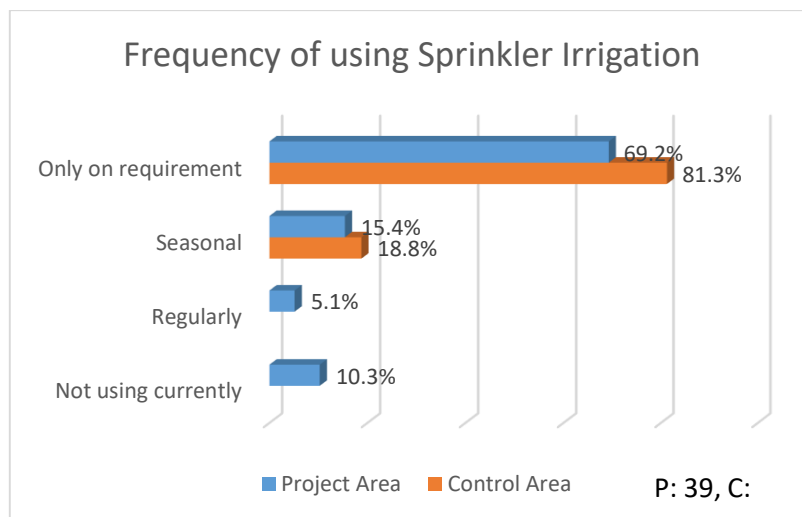


Figure 23: Frequency of using Sprinkler Irrigation

The graph compares the frequency of using the sprinkler irrigation asset in the project area to that in the control area. In Project area the majority (69.2%) of respondents in the project area reported using the sprinkler irrigation asset only when it is required. This indicates that they are utilizing sprinkler irrigation as needed, likely during periods of water stress or specific crop growth stages. A smaller percentage (15.4%) of respondents in the project area reported using

the sprinkler irrigation asset seasonally. This suggests that they use it during particular seasons or periods when water availability or crop water requirements vary. A minority of respondents (5.1%) in the project area indicated that they use the sprinkler irrigation asset regularly. This implies that they consistently apply sprinkler irrigation throughout the crop cycle, regardless of specific requirements. Some respondents (10.3%) in the project area mentioned that they are not currently using the sprinkler irrigation asset. This might be due to factors such as crop rotation or the availability of other water sources.

While the control area had an even higher percentage (81.3%) of respondents who reported using the sprinkler irrigation asset only when it is required. This suggests that the control area also relies on sprinkler irrigation during specific crop growth stages or water stress periods. A smaller percentage (18.8%) of respondents in the control area mentioned using sprinkler irrigation seasonally. This pattern is similar to that in the project area. The data indicates that both project and control areas primarily use sprinkler irrigation on an as-needed basis, with a slightly higher percentage of such usage in the control area. Seasonal usage is also common in both areas, but regular and continuous usage is relatively less frequent. This also suggests that farmers in both areas are strategic in their application of sprinkler irrigation to optimize water use for their crops.

Crops cultivated using Sprinkler

In the project area, the majority of respondents who use sprinkler irrigation cultivate Cotton (35.6%) followed by Soybean (22.2%) and Chickpea (28.9%). Other crops mentioned include pigeon pea, sugarcane, turmeric, and a small percentage of respondents indicated that they do not use sprinkler irrigation for any crop.

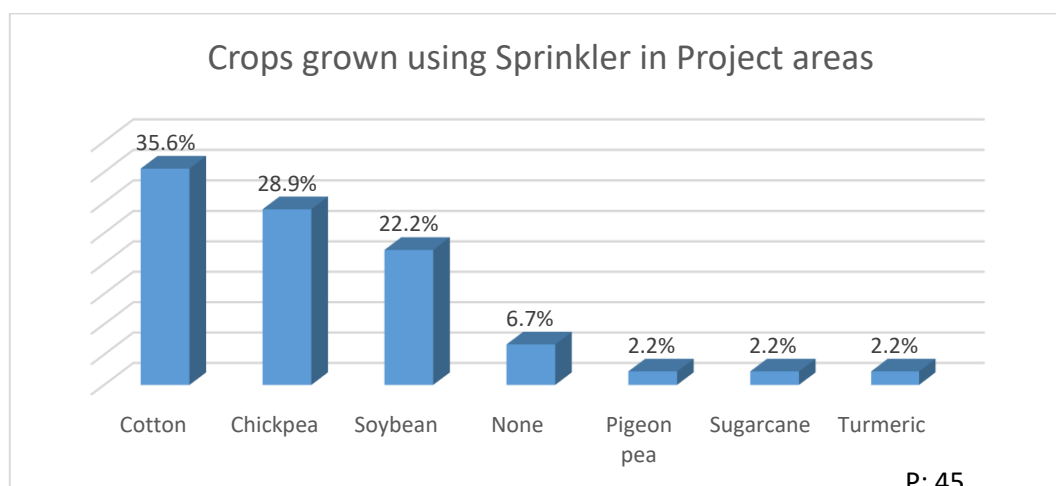


Figure 24: Crops grown using Sprinkler in Project areas

In the control area where respondents were using sprinkler irrigation, Cotton (38.1%) was the most commonly cultivated crop followed by Wheat (19.0%), then Soybean (14.3%) and

Chickpea (14.3%): Both soybean and chickpea are also cultivated using sprinkler irrigation, and they have the same percentage of respondents choosing them.

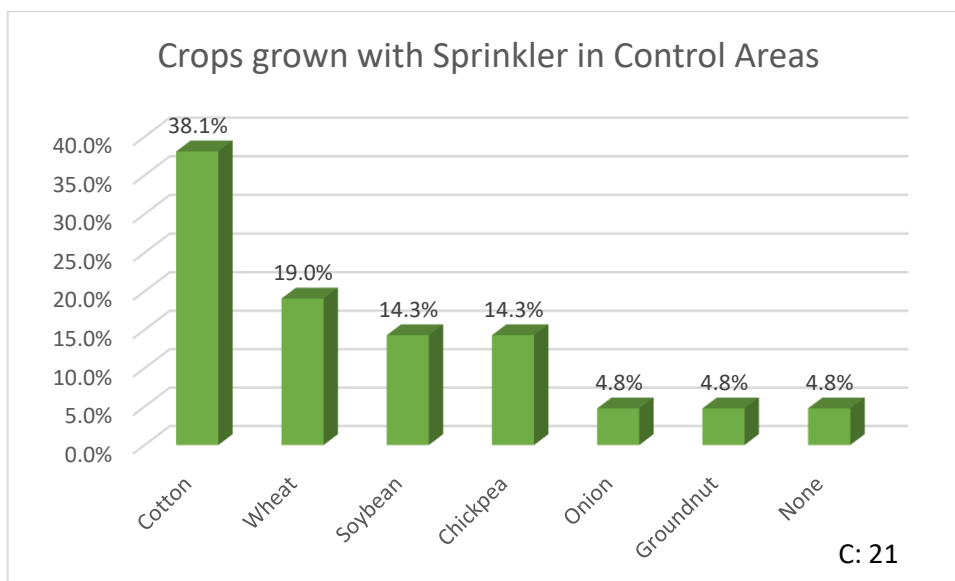


Figure 25: Crops grown with Sprinkler in Control areas

Onion (4.8%) and Groundnut (4.8%) are mentioned by a smaller percentage of respondents, indicating their use of sprinkler irrigation for these crops. Additionally, a small percentage of respondents (4.8%) mentioned that they do not use sprinkler irrigation for any crop in the control area.

Crops Grown Before & After Sprinkler Adoption:

The graphs below show the changes in crop cultivation patterns before and after the adoption of the sprinkler irrigation system.

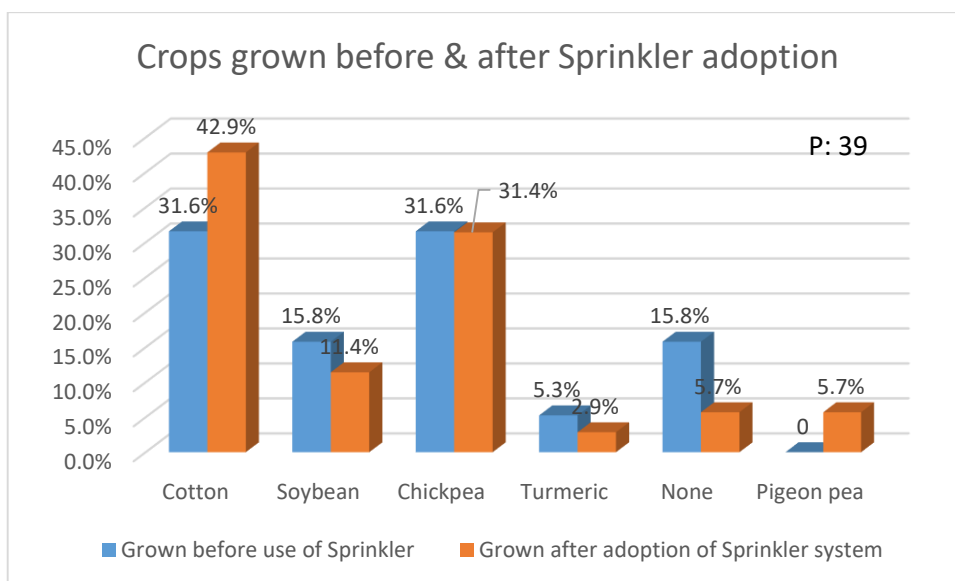


Figure 26: Crops grown before & after Sprinkler adoption

- **Cotton:** The percentage of respondents growing cotton increased from 31.6% before adopting the sprinkler system to 42.9% after adoption.
- **Soybean:** The percentage of respondents growing soybean decreased slightly from 15.8% before adopting the sprinkler system to 11.4% after adoption.
- **Chickpea:** The percentage of respondents growing chickpea remained relatively stable, decreasing slightly from 31.6% before adoption to 31.4% after adoption.
- **Turmeric:** The percentage of respondents growing turmeric decreased from 5.3% before adopting the sprinkler system to 2.9% after adoption.
- **Pigeon pea:** Pigeon pea cultivation was not reported before adopting the sprinkler system but was reported by 5.7% of respondents after adoption.

Overall, the adoption of the sprinkler irrigation system appears to have led to changes in crop cultivation patterns, with an increase in cotton cultivation and a decrease in the percentage of respondents not cultivating any crops. This suggests that the sprinkler system has facilitated agricultural activities and crop diversification among the respondents

Benefitted by using Sprinkler System:

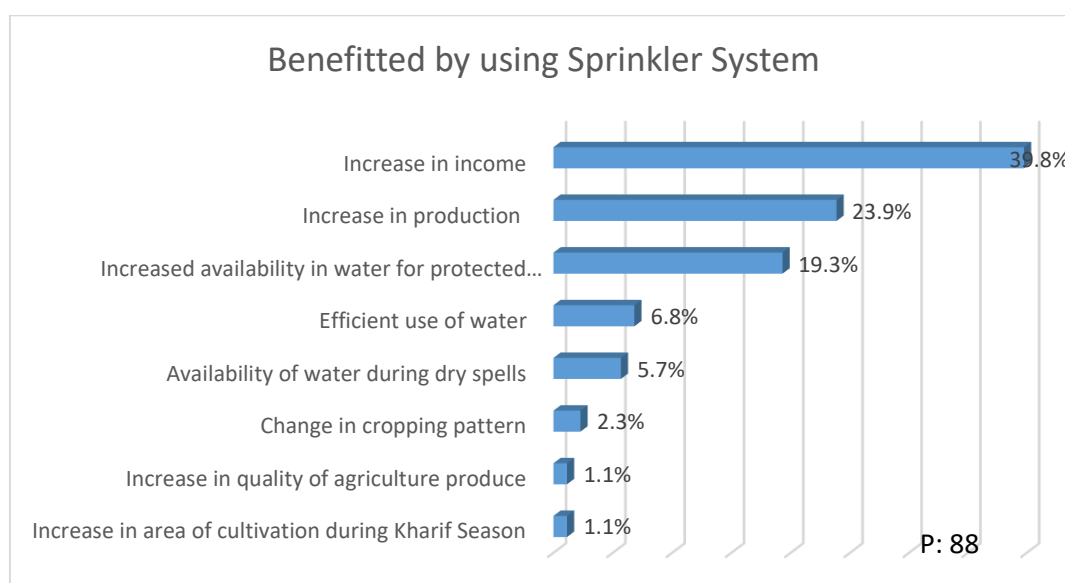


Figure 27: Benefitted by using Sprinkler Irrigation System

As per the response from 88 project beneficiaries of how they have been benefited from using sprinkler irrigation, the majority of respondents (39.8%) reported that they have experienced an increase in their income as a result of using sprinkler irrigation. This suggests that the technology has positively impacted their financial well-being. Nearly a quarter (23.9%) of respondents noted an increase in crop production due to sprinkler irrigation. This is a significant benefit as higher yields can contribute to higher income. A notable percentage (19.3%) of respondents mentioned that sprinkler irrigation has improved the availability of water for protected irrigation. This is crucial for consistent and reliable crop growth. Some

respondents (6.8%) highlighted the efficient use of water as a benefit. This indicates that sprinkler irrigation is helping them conserve water resources. A portion of respondents (5.7%) mentioned that sprinkler irrigation has ensured the availability of water even during dry spells, which can be critical for crop survival. A small percentage (2.3%) of respondents reported a change in their cropping pattern, suggesting that sprinkler irrigation may have enabled them to diversify their crops or experiment with new ones. A minority (1.1%) of respondents noted an improvement in the quality of their agricultural produce, which can be valuable for marketing and fetching better prices. A few respondents (1.1%) mentioned an expansion in the area of cultivation during the *Kharif* season, possibly indicating that sprinkler irrigation has allowed them to cultivate more land. Overall, the data suggests that sprinkler irrigation has brought several benefits to the respondents, including increased income and production, improved water availability, and efficient water use. These benefits contribute to CRA as enhanced agricultural practices and livelihoods.

Water Consumption and Wastage:

When enquired about reduction of wastage of water in Project areas, it was evident that the majority of respondents (P: 35), accounting for 94.3%, feel that water consumption and wastage in agriculture have reduced due to the use of sprinkler irrigation. This indicates that sprinkler irrigation technology has been effective in promoting water conservation practices among the respondents, which is a positive outcome in terms of sustainable agriculture and resource management. Only a small percentage of respondents (5.7%) did not perceive a reduction in water consumption and wastage, suggesting that further investigation into the reasons for this perception difference might be beneficial.

Pipes

A total of 5.3% from Project (n=9) and about 1% from Control areas (n=2) have availed the benefits of Pipes. In Project area 8 beneficiaries have availed PVC pipes and 1 beneficiary has availed HDPE pipes, while in Control area 2 beneficiaries have availed PVC pipes.

The data provided from Project area indicated that 55.6% of respondents use pipes for irrigating fields only on requirement, 11.1% use pipes for irrigation seasonally, while 33.3% use pipes for irrigation regularly. While, in the Control Area, 50.0% of respondents use pipes for irrigating fields only on requirement and remaining 50.0% use pipes for irrigation seasonally. None reported using pipes for irrigation regularly in the control area. This data suggests that in the project area, there is a higher percentage of respondents who use pipes for irrigation regularly compared to the control area. In contrast, in the control area, the majority use pipes only on requirement or seasonally. The project area may have seen more consistent adoption of pipe irrigation for their fields. As per data available in CM-VII survey both Project and Control area pipes are used for Drip and Sprinkler irrigation.

In the Project Area 11.1% of respondents use pipe sets for lifting water from the river/canal, 66.7% use pipe sets for transporting water from a well to a pond, 22.2% use pipe sets for other purposes. While in the Control Area, 33.3% of respondents use pipe sets for lifting water from the river/canal, 66.7% use pipe sets for transporting water from a well to a pond, none of the respondents reported using pipe sets for other purposes in the control area. It appears that the primary use of pipe sets in both areas is for transporting water from a well to a pond. However, in the project area, there is a higher percentage of respondents who use pipe sets for lifting water from the river/canal, and some respondents also reported other uses for pipe sets.

Motor Pumps

In CM-VII Survey, 7 beneficiaries have received Motor Pump, while in Control area 5 beneficiaries have availed this benefit. In the Project Area, 71.4% of respondents use motor pumps only on requirement, 14.3% use them seasonally, 14.3% use them regularly. While in the Control Area, 40.0% of respondents use motor pumps only on requirement, 60.0% use them seasonally and none of the respondents in the control area reported using motor pumps regularly.

Similar to the previous asset, it appears that in the project area, there is a more diverse pattern of motor pump usage, with some respondents using them regularly. In contrast, in the control area, the majority of respondents use motor pumps either on requirement or seasonally, with no regular usage reported. It was observed that both beneficiaries from Project and Control areas use motor pumps to operate Sprinkler and Drip Irrigation system. It was also observed that majority of beneficiaries use 5 and 7 HP motors in Project areas, while in Control areas most beneficiaries use 5 HP motor followed by 3 HP. Out of 7 beneficiaries from Project villages, 6 have reported using capacitor in their motors, while in Control villages none of them reported using capacitor in their motors. The main crop to irrigate was Cotton in Project area, while it was Pigeon pea in Control with the help of Motor pumps.

Component B: Post-harvest Management and Value Chain Promotion

Along with interventions for climate resilient agriculture systems, it was essential to develop absorptive capacity of stakeholders. This component aims to support the participation of smallholders of Farmers Producer Companies (FPCs), Self Help Groups (SHGs) and integration in the value chains of major crops and to strengthen the supply chain for the climate-resilient crop varieties in the project area. The component also seeks to improve the seed supply chain in the project areas.

As part of CM-VII survey, data had been collected on parameters related to FPCs, SHGs and seed supply chain in rest of project area. The feedback on value chain activities, support through PoCRA, benefits, issues and challenges had been recorded and is presented in this section.

Findings from FPOs Supported by PoCRA

Status of FPCs in CM-VII Survey

In CM-VII Survey, in Project areas we had interviewed 36 Board of Directors and 29 Members totalling 65 from 21 FPCs. In Control we interviewed 16 Board of Directors and 16 members of FPCs, totalling 32 respondents from 11 FPCs surveyed. It was found that 85% from Project and 66% from Control areas had mixed (Male and Female) membership in FPCs, and 15.4% in Project and 6.3% in Control had only Male membership. 21% Female membership was also recorded from Control area.

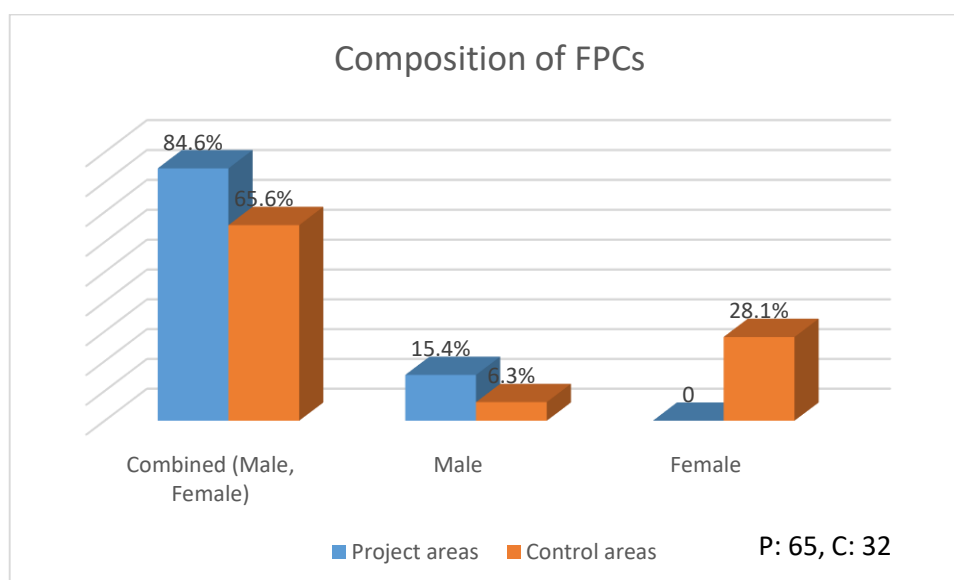


Figure 28: Composition of FPCs

It was observed that out of 21 FPCs in Project area 92% were functional, while in Control out of 11 FPCs, 50% were functional.

With regard to trainings received 41% from Project and 44% from Control (P: 65, C: 32) have received training on FPC Management. The trainings in Project Areas were given by ATMA (58% members), VAMNICON (5.3% members) and from other sources (about 37.8% members). While in case of Control, 43% members have received training from ATMA, 7% from VAMNICON and 50% from other places.

Current Activities by FPC

The graph shows the results of a survey that asked participants about the activities their FPC (Farmers Producer Company) were currently involved in.

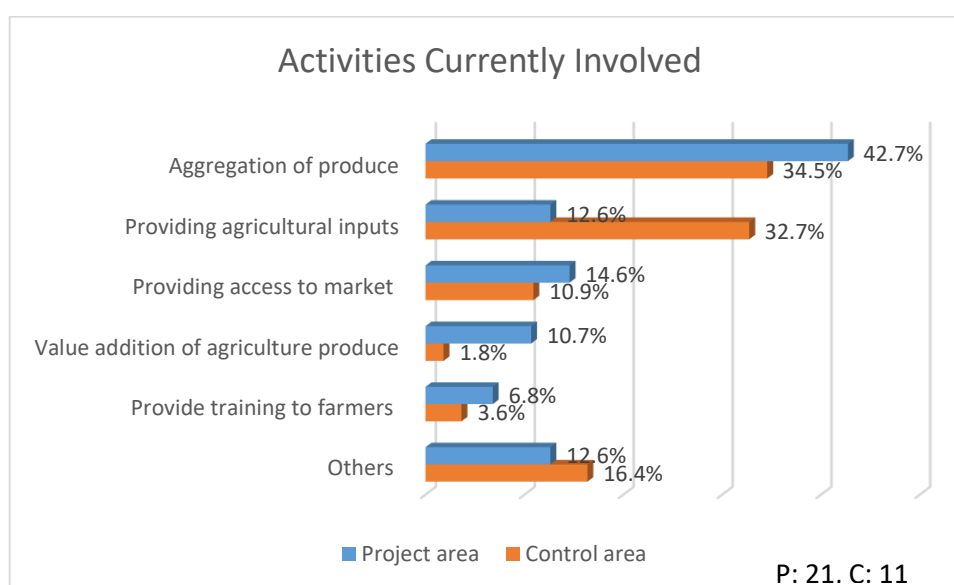


Figure 29: Activities Currently Involved

About 42.7% of FPCs in the project area are involved in the aggregation of agricultural produce, 12.6% of FPCs provide agricultural inputs such as seeds and fertilizers, 14.6% of FPCs help farmers access markets for their agricultural produce, 10.7% of FPCs are engaged in value addition activities for agricultural produce, such as sorting and grading, 6.8% of FPCs offer training to farmers on best agricultural practices, while 12.6% of FPCs in the project area are involved in various other activities. While, 34.5% of FPCs in the control area are involved in the aggregation of agricultural produce, 32.7% of FPCs in provide agricultural inputs such as seeds and fertilizers, 10.9% of FPCs in the control area help farmers access markets for their agricultural produce, 1.8% of FPCs are engaged in value addition activities for agricultural produce, such as sorting and grading, 3.6% of FPCs offer training to farmers on best agricultural practices and 16.4% of FPCs in the control area are involved in various other activities. This data indicates that FPCs in both the project and control areas play a crucial role in the aggregation of agricultural produce. However, the types of activities they are involved in vary, with some FPCs focusing on providing inputs, facilitating market access,

value addition, training, and other activities. These activities contribute to improving the overall agricultural ecosystem and farmers' livelihoods.

Participation in Meetings

With regard to participation in general body meetings of Farmer Producer Companies (FPCs) or Farmer Producer Organizations (FPOs) in Project area shows that out of 29 respondents, 17 respondents (58.6%) reported that they always participate in the general body meetings of their FPC/FPO, 12 respondents (41.4%) indicated that they sometimes participate in these meetings. This indicates that a majority of the respondents are actively engaged and regularly participate in the general body meetings of their FPC/FPO. Active participation in these meetings is important for decision-making, governance, and the overall functioning of these farmer organizations.

With regard to the level of participation in the decision-making process of Farmer Producer Companies (FPCs) or Farmer Producer Organizations (FPOs), out of 29 members 15 respondents (51.7%) reported that they always participate in the decision-making process of their FPC/FPO, 3 respondents (44.8%) indicated that they sometimes participate in the decision-making process, while 1 respondent (3.4%) mentioned that they rarely participate in the decision-making process. This reveals that a significant portion of the respondents are actively engaged in the decision-making process of their FPC/FPO, either always or sometimes. Active participation in decision-making is essential for ensuring that the interests and needs of the farmers are considered and addressed by these organizations.

Trainings received through their FPCs/FPOs

With response to question whether respondents have received any training through their Farmer Producer Companies (FPCs) or Farmer Producer Organizations (FPOs), in Project area out of 29 members, 8 (27.6%) reported that they have received training through their FPC/FPO, 21 (72.4%) indicated that they have not received training through their FPC/FPO. While in case of Control area out of 16 members, 7 (43.8%) reported that they have received training through their FPC and 9 (56.3%) indicated that they have not received training through their FPC. This shows that a minority of the respondents have received training through their FPCs or FPOs, while the majority have not. Training can be a valuable resource for farmers to enhance their knowledge and skills related to agriculture and farming practices, so efforts to expand training opportunities may benefit more farmers in these organizations.

Awareness of Business Plans

It was asked to the 29 members from Project area, whether they are aware of business plans prepared by their company for financial support from NDKSP. 14 respondents (48.3%)

reported that they were aware of business plans prepared by their company for financial support from NDKSP, while 15 respondents (51.7%) indicated that they were not aware of such business plans. This suggests that there was a relatively even split among respondents, with a slight majority (51.7%) not being aware of business plans for financial support from NDKSP. Awareness of these plans is important as it can help farmers understand the financial aspects of their farming activities and the support available to them.

Facilities/Services provided by FPCs

It was asked what kind of facilities or services do they provide/ receive from the FPCs, out of 111 valid responses from Project area, 36 respondents (32.4%) reported receiving marketing support from their FPC to sell their agricultural produce. This support likely includes assistance in finding markets, negotiating prices, and ensuring a fair deal for the farmers, 29 respondents (26.1%) mentioned that they purchase seeds through their FPC. This indicates that FPCs play a role in providing access to quality seeds for farmers. 15 respondents (13.5%) purchase chemicals and fertilizers through their FPC. This can help farmers access essential inputs for their farming activities. 4 respondents (3.6%) reported receiving support from their FPC in grading and sorting their agricultural produce. This can enhance the quality and marketability of their produce. 2 respondents (1.8%) mentioned that their FPC helps them convert their agricultural produce into value-added products, such as processing soybeans into soybean oil. 10 respondents (9.0%) have access to equipment and tools for agriculture through their FPC. This can be beneficial for mechanizing farm operations. 8 respondents (7.2%) have access to godown (storage) facilities provided by their FPC. This is crucial for storing agricultural produce safely. 2 respondents (1.8%) mentioned receiving other services from their FPC, although the specific services were not specified.

Table 19: Facilities or services provided/received by the FPCs from Project Area

S.No.	Facilities or services provided/ received from FPCs in Project Area	Frequency	
		Total	Percent
	Total	111	100.0%
1	Marketing support in selling agriculture Produce	36	32.4%
2	Purchasing seeds through FPC	29	26.1%
3	Purchasing chemicals fertilizers through FPC	15	13.5%
4	Grading and sorting of agriculture produce with support of FPC	4	3.6%
5	Converting agriculture produce to value added products	2	1.8%
6	Getting access to equipment/tools for agriculture	10	9.0%
7	Access to godown facility	8	7.2%
8	Others	2	1.8%
9	None	5	4.5%

Overall, the data shows that FPCs are involved in providing various forms of support to farmers, including marketing assistance, input procurement, and access to storage and

equipment. These services can contribute to improving the livelihoods of farmers and enhancing climate resilience in agriculture.

While in case of Control areas, the response from 54 valid cases, 13 respondents (24.1%) reported receiving marketing support from their FPC to sell their agricultural produce, 19 respondents (35.2%) mentioned that they purchase seeds through their FPC, 11 respondents (20.4%) purchase chemicals and fertilizers through their FPC, 1 respondent (1.9%) mentioned that their FPC helps them convert their agricultural produce into value-added products, such as processing soybeans into soybean oil, 1 respondent (1.9%) has access to equipment and tools for agriculture through their FPC, 4 respondents (7.4%) mentioned receiving other services from their FPC, although the specific services were not specified.

Table 20: Facilities or services provided/received by the FPCs from Control Area

S.No.	Facilities or services provided/ received from FPCs from Control area	Frequency	
		Total	Percent
	Total	54	100.0%
1	Marketing support in selling my agriculture Produce	13	24.1%
2	Purchasing seeds through FPC	19	35.2%
3	Purchasing chemicals fertilizers through FPC	11	20.4%
5	Converting my agriculture produce to value added	1	1.9%
6	Getting access to equipment/tools for agriculture	1	1.9%
8	Others	4	7.4%
9	None	5	9.3%

Crop Sold through FPCs

The below table shows the crops (agricultural produce) that respondents have sold through the FPCs in Project area.

Table 21: Crops sold through FPCs

S.No.	Crop Sold through FPCs	Frequency	
		Total	Percent
	Total	25	100.0%
1	Cotton	2	8.0%
2	Pigeon pea	1	4.0%
3	Soybean	15	60.0%
4	Chickpea	2	8.0%
5	Wheat	1	4.0%
6	Others	4	16.0%

A total of 25 beneficiaries have sold their products through FPCs. Of which 2 respondents (8.0%) mentioned selling cotton through their FPC. Cotton is a major cash crop, and FPCs may play a role in marketing and selling cotton for farmers. 1 respondent (4.0%) reported

selling pigeon pea through their FPC. Pigeon pea is a pulse crop, and FPCs can help in aggregating and marketing pulses, 15 respondents (60.0%) mentioned selling soybean through their FPC. Soybean is a significant crop for both oilseed and protein meal production, and FPCs may provide market access for soybean farmers, 2 respondents (8.0%) indicated selling chickpea through their FPC. Chickpea is another important pulse crop, and FPCs may support its marketing. While, 1 respondent (4.0%) reported selling wheat through their FPC. Wheat is a staple crop, and FPCs may assist in selling it in the market. 4 respondents (16.0%) mentioned selling other crops through their FPC, although the specific crops were not specified. This data suggests that FPCs are involved in the marketing and sale of various crops, including soybean, cotton, pulses like pigeon pea and chickpea, and staples like wheat. This highlights the role of FPCs in diversifying marketing options for farmers and helping them access markets for their produce.

In case of Control area, out of 24 respondents, 9 (37.5%) mentioned selling cotton through their FPC, 1 respondent (4.2%) reported selling pigeon pea, 9 respondents (37.5%) mentioned selling soybean through their FPC, while 5 respondents (20.8%) indicated selling chickpea through their FPC.

Table 22: Crops sold through FPCs in Control Area

S.No.	Crop sold through FPC in Control area	Frequency	
		Total	Percent
	Total	24	100.0%
1	Cotton	9	37.5%
2	Pigeon pea	1	4.2%
3	Soybean	9	37.5%
4	Chickpea	5	20.8%

Status of SHG and Farmer Groups

In CM-VII Survey, 32 beneficiaries were interviewed including 15 SHGs (with total Female members) and 14 Farmer groups (Male and Female members), and 3 with only Male members. While in case of control 16 SHGs were interviewed with only Female members.

Topics of training received for SHG/Farmer Groups

Out of the total 22 respondents from Project areas, the majority received training 7 (31.8%) reported receiving training on skill upgradation. This could include training to improve specific skills related to their livelihoods or income-generating activities, 3 (13.6%) mentioned receiving training on market awareness. This training likely focused on helping members understand market trends, pricing, and opportunities. 3 respondents (13.6%) indicated receiving training on financial planning. This training would likely cover topics related to budgeting, saving, and

managing finances effectively. 4 respondents (18.2%) reported receiving training on leadership development. This type of training aims to empower individuals with leadership skills and confidence. 5 respondents (22.7%) mentioned receiving training on farming technologies. This could include training on modern agricultural practices, use of technology in farming, and sustainable farming methods.

This data suggests that SHGs provide a range of training opportunities to their members, including those related to skill development, market awareness, financial planning, leadership, and farming technologies. These trainings can contribute to the overall socio-economic development of SHG members and enhance their livelihoods.

Frequency of Saving with SHG/ Farmer Groups

With regard to question on the frequency of saving as a part of the SHG, out of total 32, the majority of the 23 respondents (71.9%) mentioned saving on a monthly basis. This is the most common frequency for saving within the SHGs, 1 respondent (3.1%) reported saving on a weekly basis as part of their SHG and 8 respondents (25.0%) stated that they are not currently saving as part of their SHG. This data indicates that the majority of respondents save on a monthly basis as members of their SHGs, while a smaller portion do not save currently. Saving through SHGs is a common practice and contributes to financial stability and group-based financial activities. While in Control Areas out of 16 respondents who were part of the SHG, all saved on a monthly basis.

Trainings received as a part of SHG

In Project area out of 32 respondents, only 5 (15.6%) have received training as part of their SHG, while 27 respondents (84.4%) stated that they have not received any training as part of their SHG. This indicates that the majority of respondents have not received any training as part of their SHG, while a smaller percentage have had training opportunities. Training within SHGs can vary widely and may cover various topics such as financial literacy, skill development, and more, depending on the goals and activities of the SHG. In case of Control area out of 16 only 1 respondent (6.3%) reported receiving training as part of their SHG, while 15 respondents (93.8%) stated that they have not received any training as part of their SHG. Training within SHGs can vary widely and may cover various topics depending on the goals and activities of the SHG.

Income Generation by SHGs/ Farmer Groups

From the response generated from 32 beneficiaries of Project area, 43.8% reported that their SHG is currently involved in income-generating activities. These activities could include various income-generating projects or businesses initiated and managed by the SHG, while 56.3% stated that their SHG is not currently involved in income-generating activities. This data suggests that a significant portion of the respondents' SHGs are engaged in income-

generating activities, which can contribute to the economic empowerment and sustainability of the group members. However, a notable number of SHGs have not yet ventured into income-generating initiatives. While in case of SHGs in Control areas, none of them are involved in income generation activities.

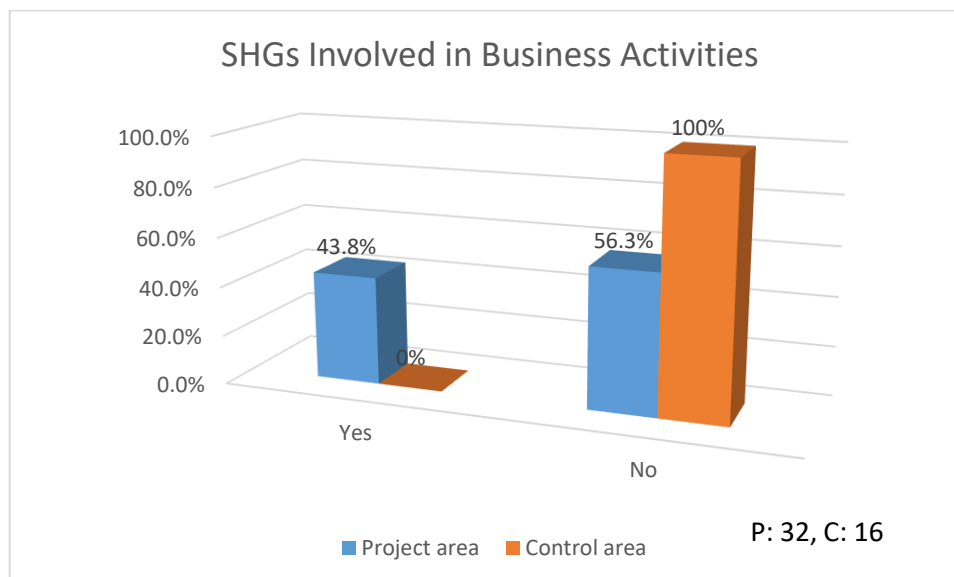


Figure 30: SHGs involved in Business Activities

Facilities or services provided by SHG

To a question on the facilities or services provided or received by respondents from their Self-Help Groups, a response from 38 Project beneficiaries were generated.

- **Marketing support in selling agriculture produce:** 5 respondents (13.2%) mentioned that they receive marketing support for selling their agricultural produce through their SHG. This support could involve assistance in finding buyers or better markets for their products.
- **Purchasing seeds through SHG:** 3 respondents (7.9%) reported purchasing seeds for their agriculture activities through their SHG. This indicates that the SHG may collectively procure seeds, possibly at better rates, and distribute them to its members.
- **Purchasing chemicals fertilizers through SHG:** 2 respondents (5.3%) mentioned that they buy chemicals or fertilizers for farming purposes through their SHG, indicating that the SHG may engage in bulk purchases.
- **Converting agriculture produce to value-added products:** 1 respondent (2.6%) reported that their SHG is involved in converting agricultural produce into value-added products. This could include activities like processing raw materials into finished goods, such as oil extraction from soybeans.

- **Getting access to equipment/tools for agriculture:** 7 respondents (18.4%) mentioned that they have access to equipment and tools for agriculture through their SHG. This could involve sharing or renting farming equipment among SHG members.
- **Others:** 13 respondents (34.2%) provided various other services or facilities that their SHGs are involved in. These services may vary widely depending on the specific goals and activities of the SHGs.
- **None:** 7 respondents (18.4%) stated that they do not receive any facilities or services from their SHG.

This data suggests that SHGs are engaged in a variety of activities and services to support their members in agriculture and related endeavours, including marketing support, seed and fertilizer procurement, equipment access, and value addition.

In case of Control area, response was generated from 16 beneficiaries. Of which 1 respondent (6.3%) mentioned that they receive marketing support for selling their agricultural produce through their SHG. 1 respondent (6.3%) reported that their SHG is involved in grading and sorting their agricultural produce and 11 respondents (68.8%) provided various other services or facilities that their SHGs are involved in. 3 respondents (18.8%) stated that they do not receive any facilities or services from their SHG.

Awareness on the financial support from NDKSP

From the Project area, out of 32 responses, 25 respondents (78.1%) reported that they are aware of the financial support that their SHG will receive or has received from NDKSP. This suggests that a significant majority of respondents are informed about this support program, while 7 respondents (21.9%) mentioned that they are not aware of the financial support from NDKSP. This may indicate that there is room for improved communication or awareness-building efforts to ensure that all eligible SHG members are informed about the support available to them. Overall, the majority of respondents are aware of the financial support from NDKSP, which is a positive sign for the program's reach and impact. Efforts can be made to further enhance awareness among those who are not yet informed.

It was also observed that out of 32, 16 respondents (50.0%) reported that their SHGs have received grants from NDKSP for business activities. This indicates that half of the respondents' SHGs have benefited from financial support from NDKSP which can be seen as a positive outcome in terms of supporting income-generating activities and entrepreneurship within the community.

Agribusiness Interventions

In response to the question on the year in which grants were disbursed to FPCs and SHGs, from 42 responses, the majority of respondents, 35 of them (83.3%), mentioned that grants

were disbursed in the year 2021-2022. This suggests that the most recent year for grant disbursement was 2021-2022, indicating an active period of financial support for these organizations during that time while, 3 respondents (7.1%) reported that grants were disbursed to their FPCs or SHGs in the year 2020-2021. 4 respondents (9.5%) indicated that grants were disbursed in other years not specified in the options. These "other" years could represent unique cases or earlier disbursements. Overall, the data highlights that the year 2021-2022 was a significant period for grant disbursement to FPCs and SHGs, likely indicating a recent focus on providing financial support to these organizations for their activities.

Types of agribusiness activities started with NDKSP support

In CM-VII Survey it was observed that out of 42 valid responses, the most common type of agribusiness project/activity initiated with NDKSP support was the Custom Hiring Centre, reported by 19 respondents (45.2%). Custom Hiring Centres typically provide farm machinery and equipment for rent to local farmers, facilitating mechanized farming practices. 10 respondents (23.8%) mentioned that they initiated godown projects with NDKSP support. Godowns are storage facilities for agricultural produce, helping farmers store their crops safely and avoid post-harvest losses. The remaining respondents reported various other types of agribusiness projects or activities, including seed processing units, pulse mills, oil extraction units, turmeric processing units, and others. These activities could involve processing and value addition to agricultural products. The data illustrates a diverse range of agribusiness projects and activities initiated with NDKSP support, with a notable emphasis on Custom Hiring Centres and godowns as key initiatives. These projects contribute to enhancing agricultural productivity and post-harvest management in the supported regions.

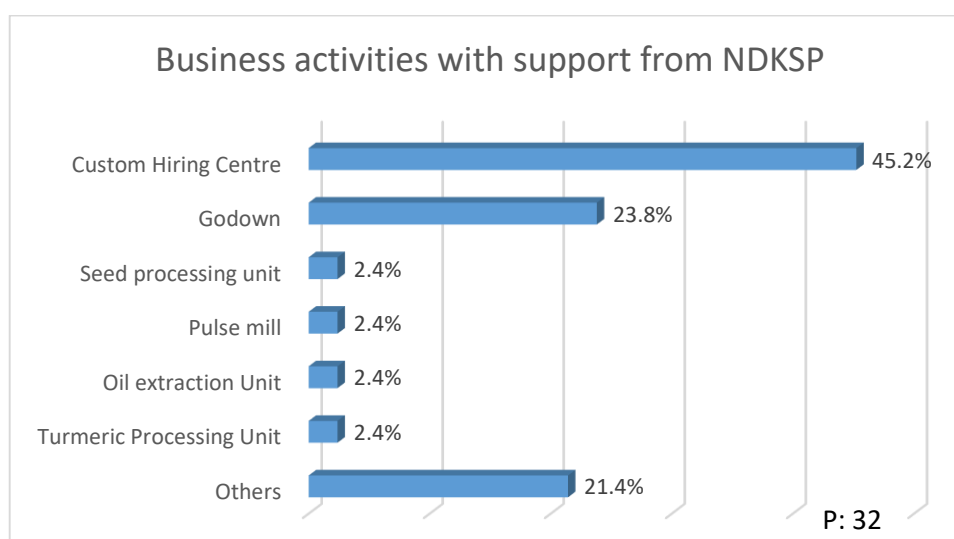


Figure 31: Business activities with support from NDKSP

Overall, the data suggests that NDKSP support has been successful in enabling and encouraging the development of a diverse range of agribusiness projects and activities among beneficiaries. The high frequency of Custom Hiring Centres in particular indicates that there is significant demand for shared resources and equipment, which could be further leveraged to support agricultural productivity and sustainability in the region.

FPC Audit Report Status in CM-VII Survey

Total 21 FPCs supported by the project were visited during CM-VII Survey, audited reports from 5 FPCs showed that they have started earning the profits, while 02 FPCs had suffered loss and whereas from remaining 14 FPCs, no audit report was received. The detailed list is attached in Annexure I.

Asset Verification of Beneficiaries

During CM-VII Survey, asset verification for 21 FPOs and 16 SHGs were done. It was observed that CHC was more popular activity followed by Grain Processing Unit and Other business activities. The details of all the FPC's visited is presented in Annexure II and III. Overall, the majority of assets mentioned by the respondent are physically present on site, indicating progress in the implementation of project activities.

Component C: Institutional Development, Knowledge, and Policies

In order to achieve climate resilience and ensure the intended results from the activities proposed, it is essential to build the capacity of the stakeholders. The component focuses on mainstreaming climate resilience and coordination at the field level. As part of CM-VII, feedback has been taken from various stakeholders on their awareness, capacity building, and understanding of challenges and issues related to environmental safeguards are presented in this section.

Participation in Exposure Visits:

With regard to question on participation in Exposure visits, out of 415 respondents, 53 (12.8%) indicated that they had participated in exposure visits organized under the NDKSP project and 362 respondents (87.2%) answered negatively indicating that the vast majority of respondents have not participated in any exposure visits organized under the PoCRA project. A smaller proportion (12.8%) has had the chance to participate in these exposure visits, suggesting that there has been some level of outreach and engagement with a subset of the surveyed population. The data suggests that exposure visits organized under the PoCRA project have reached a relatively small portion of the surveyed population. Expanding access to these visits or increasing awareness about their availability may help in engaging a larger number of community members and promoting project participation and learning.

Attendance in PoCRA Training:

As a part of survey it was asked to the beneficiaries whether they have attended any training provided by the PoCRA project. Out of 415 respondents only 27 respondents (6.5%) answered "Yes," indicating that they have attended training sessions provided by the PoCRA project and 388 respondents (93.5%) answered "No," indicating that the vast majority of respondents have not attended any training provided by the PoCRA project. The data shows that the majority of respondents (93.5%) have not attended any training sessions provided by the PoCRA project. A relatively small proportion (6.5%) has had the opportunity to participate in these training sessions, suggesting that there has been some level of outreach and engagement with a limited number of community members through training initiatives. Expanding access to training programs or increasing awareness about their availability may help in engaging a larger number of community members and promoting knowledge and skills development related to the project's objectives.

Awareness of Grievance Box:

In CM-VII Survey, 180 respondents (43.4%) from a total of 415 respondents indicated that they are aware of the existence of a grievance box for the PoCRA Project at the Panchayat

Office. This suggests that a substantial portion of the surveyed population is aware of the grievance box's presence. While, 235 respondents (56.6%) answered "No," indicating that they were not aware of the grievance box for the PoCRA Project at the Panchayat Office. This shows that a larger portion of the population is unaware of the grievance mechanism. This indicated that there may be a need for improved communication or awareness campaigns to inform the community about this important mechanism for addressing grievances related to the PoCRA Project.

Complaints Through Grievance Box:

From the 180 respondents, who confirmed the existence of Grievance Box it was asked if they had ever complained through the grievance box regarding any project issues, of these, 9 respondents (5.0%) answered "Yes," indicating that they had used the grievance box to complain about project-related issues. This suggests that a very small minority of the surveyed population has utilized this mechanism to raise concerns and 171 respondents (95.0%) answered "No," indicating that the vast majority of respondents have not used the grievance box to file complaints about project-related issues. This means that a very small proportion (5.0%) of the respondents have actually used the grievance box to complain about project-related issues. This suggests that the grievance box might not be widely utilized or that there may be barriers preventing people from using it. The overwhelming majority (95.0%) of respondents have not made complaints through the grievance box. This could be due to various reasons, including lack of awareness, perceived ineffectiveness, or a lack of issues to complain about. In summary, while there is a grievance box available for addressing project-related concerns, the data indicates that it is not widely utilized by the surveyed population. This could be a signal for the need to improve awareness and accessibility of the grievance mechanism or to assess and address any potential barriers preventing people from using it. The survey had a total of 9 respondents who reported that they had used the grievance box to make complaints. It was asked if their complaints were resolved or not. 5 respondents (55.6%) replied that their complaints submitted through the grievance box have been resolved. This suggests that a little over half of the respondents who used the grievance mechanism experienced successful resolutions and 4 respondents (44.4%) answered that their complaints had not been resolved. This represents a smaller portion of the respondents, but it is still a significant proportion who did not find a resolution to their issues through the grievance box. In summary, the data shows that for those who utilized the grievance box, a significant portion had their complaints successfully resolved, but there is still a portion for whom the issues remain unresolved. This highlights the importance of ensuring an efficient and fair grievance resolution process for all users.

Visiting the PoCRA Project's YouTube Channel or Facebook Page:

The project beneficiaries were asked whether they have ever visited the YouTube channel or Facebook page of the PoCRA project. As per the response from 415 respondents, 82 respondents (19.8%) answered "Yes," indicating that they have visited the YouTube channel or Facebook page of the PoCRA project. This suggests that a relatively small portion of the surveyed population has engaged with the project's online content and 333 respondents (80.2%) answered "No," indicating that the majority of respondents have not visited the PoCRA project's YouTube channel or Facebook page. The data shows that the majority of respondents (80.2%) have not visited the PoCRA project's YouTube channel or Facebook page. A smaller proportion (19.8%) has engaged with the project's online content, indicating some level of interest or awareness through these digital platforms. In summary, the data suggests that there is room for expanding the project's online outreach and engagement efforts, as the majority of respondents have not visited the project's YouTube channel or Facebook page. Increasing online visibility and communication may help in reaching a wider audience and promoting awareness and participation in the PoCRA project.

Awareness of Various Project Information Boards:

The beneficiaries were asked about their awareness of different types of project information boards installed in their villages. From the 603 multiple answers, 278 respondents (46.1%) said that they were aware of the project information board, which was the most commonly known type of information board in the village. This suggests that a significant portion of the surveyed population is aware of this type of board. While, 193 respondents (32.0%) were aware of the VCRMC board, indicating a substantial but slightly smaller portion of respondents who are familiar with this specific type of information board. About 60 respondents (10.0%) were aware of the board detailing activities under the project, which is known to a smaller percentage of the surveyed population. It was recorded that only 8 respondents (1.3%) were aware of the board presenting water balance activity details of their village. This type of board has the lowest level of awareness among the respondents. As per survey, 64 respondents (10.6%) mentioned awareness of other types of boards not specified in the given options. In summary, the data suggests that information boards are present in the village, and while a significant portion of respondents is aware of them, there may still be opportunities to increase awareness about specific types of boards and their content to ensure that the community is well-informed about project activities and initiatives.

Agro-Met Advisory Services

Agro-met advisory services are one of the important components of the project that provides weather-based information and advice to farmers to help them make informed decisions about crop management practices. As a part of CM-VII questionnaire it was asked beneficiaries (P:437) whether they receive Agro-met advisory. In response 179 (41.0%) reported that they receive Agro-met advisory, while, 258 (59.0%) stated that they do not receive Agro-met advisory. This is a larger percentage, signifying that the majority of respondents do not receive such advice.

Frequency of Agro-met Advisory:

From the total of 179 respondents who received Agro-met advisory, they were questioned about the frequency of receiving Agro-met advisory, for which 56 respondents (31.3%) reported receiving Agro-met advisory on a daily basis, 67 respondents (37.4%) stated that they receive Agro-met advisory two to three times a week, 38 respondents (21.2%) mentioned receiving advisory almost once a week. This indicates a moderate frequency of advisory, 12 respondents (6.7%) reported receiving Agro-met advisory less frequently, either fortnightly or monthly while, 6 respondents (3.4%) indicated that they receive

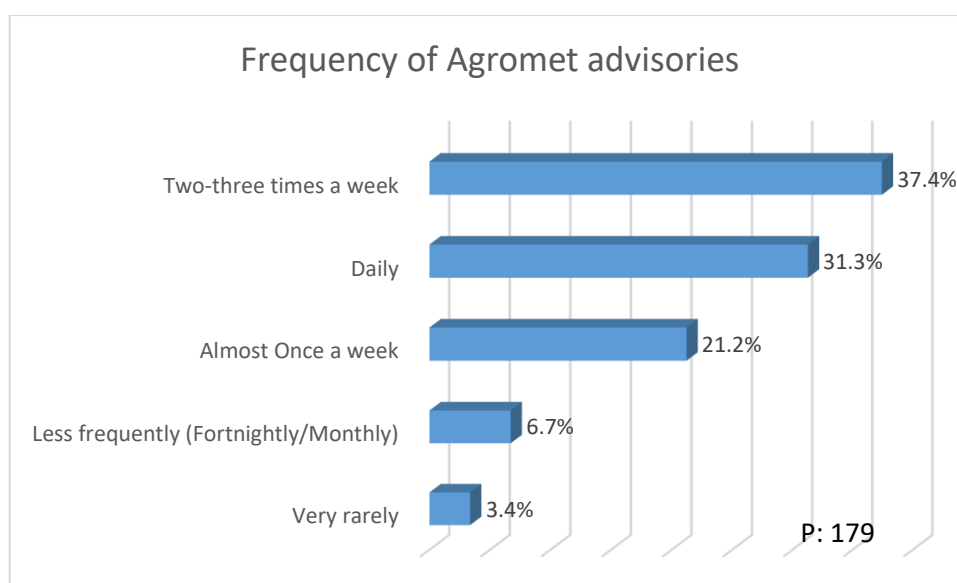


Figure 32: Frequency of Agromet advisories

Sources of Receiving Agro-met Advisory:

As a part of questionnaire in CM-VII Survey it was asked to the beneficiaries about the sources through which they receive Agro-met advisory. From a total of 300 respondents who receive Agro-met advisories, 67 (22.3%) reported that they receive Agro-met advisory through their mobile phones, 113(37.7%) mentioned that they receive Agro-met advisory from the agriculture department. 33 respondents (11.0%) stated that they receive advisory from *Krishi*

Vigyan Kendra (KVK). 60 20.0%) reported receiving Agro-met advisory from NGOs or private organizations, 26 respondents (8.7%) mentioned that they receive advisory information from newspapers. One respondent (0.3%) indicated "Other" as their source of Agro-met advisory, which is unspecified.

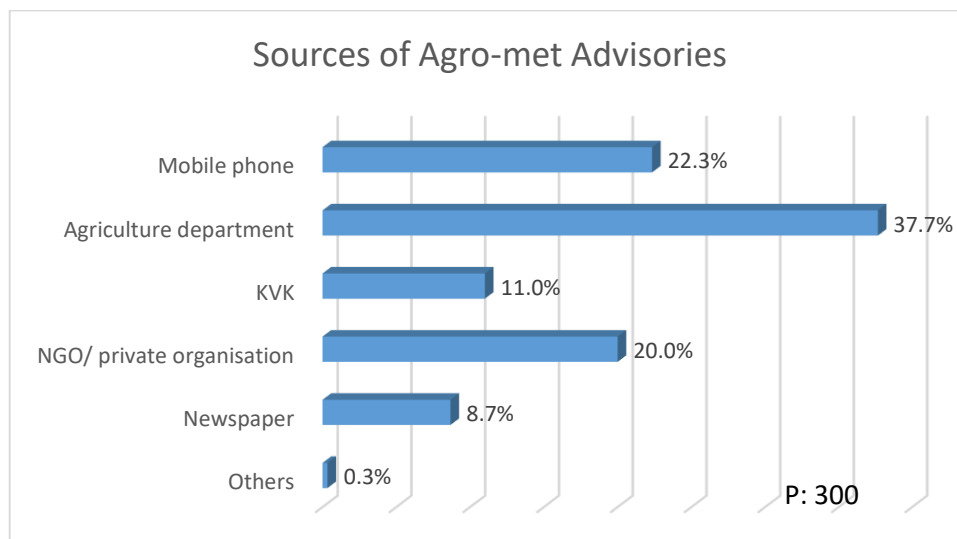


Figure 33: Sources of Agro-met advisories

Type of Information Received:

It was also asked to the respondents about the type of information they receive as part of Agro-met advisory. Here's the analysis of the data: The survey had a total of 446 respondents who receive Agro-met advisory. It was recorded that 163 respondents (36.5%) reported receiving information related to weather forecasting, 80 respondents (17.9%) mentioned receiving information related to intercultural operations, 104 respondents (23.3%) stated that they receive information about diseases and pest control measures, 24 respondents (5.4%) reported receiving real-time contingency plans, 41 respondents (9.2%) mentioned receiving information about the use of disease- and pest-resistant crop varieties, 34 respondents (7.6%) indicated that they receive market price information.

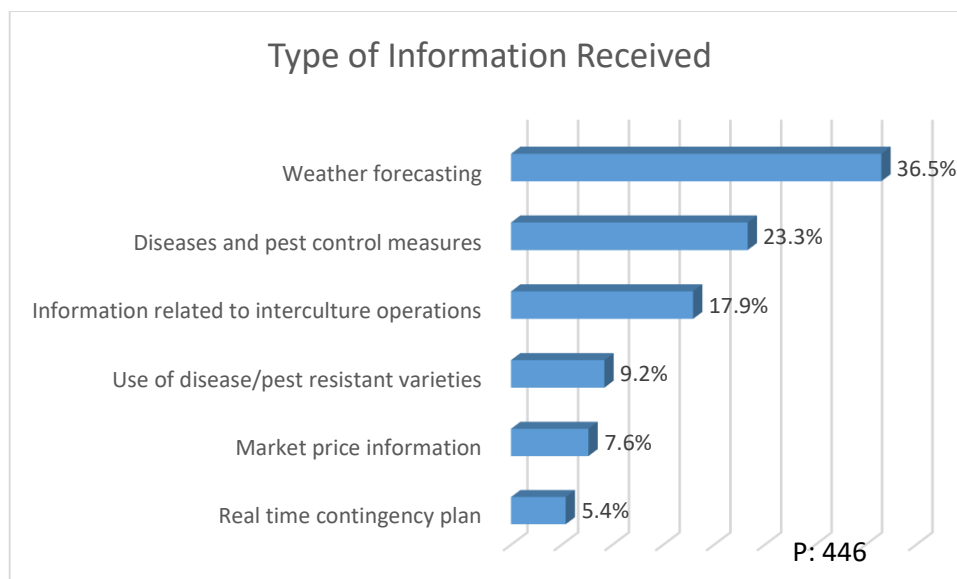


Figure 34: Type of Information Received

Feedback About Agro-met Advisory:

It was asked to the 144 beneficiaries for their feedback about Agro-met advisory services. The response was as follows:

Useful and Relevant: 134 respondents (93.1%) found the Agro-met advisory to be useful and relevant. This indicates that the majority of respondents found the advisory information valuable and applicable to their agricultural practices.

Not Useful: Only 3 respondents (2.1%) reported that they did not find the advisory useful. This suggests a very low percentage of respondents who did not benefit from the advisory services.

General Advice: 7 respondents (4.9%) considered the advisory to be general advice. This feedback suggests that some respondents may be looking for more specific or tailored information.

In summary, it suggests that Agro-met advisory services were highly regarded by the majority of respondents, who find the information provided to be valuable and relevant to their agricultural activities. This positive feedback indicates the effectiveness of these advisory services in assisting farmers with their farming decisions.

Benefits of Agro-met Advisory:

It was asked to the beneficiaries how Agro-met advisory has benefited them. From a total of 337 respondents who provided feedback on how Agro-met advisory has benefited them, 83 (24.6%) mentioned that Agro-met advisory has helped them make timely decisions during the initial stages of crop cultivation. This includes decisions related to land preparation, sowing, and manuring, 85(25.2%) reported that the advisory has been beneficial in deciding the

frequency of irrigation, 69 (20.5%) indicated that Agro-met advisory has assisted them in selecting certified seed varieties. 41 beneficiaries (12.2%) mentioned that the advisory has been useful in selecting crops for intercropping, 30(8.9%) stated that the advisory has aided them in controlling pests, 9(2.7%) reported that the advisory has benefited them in managing soil health. This includes practices to maintain soil fertility and health, 19 (5.6%) mentioned that the advisory has assisted them in preparing contingency plans. This can be important for dealing with unexpected agricultural challenges.

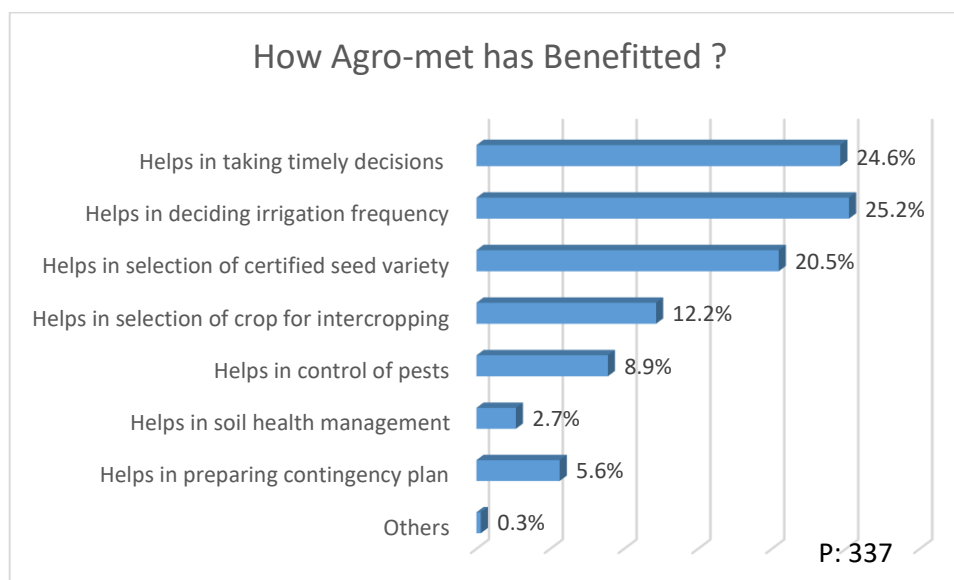


Figure 35: How Agro-met has benefitted?

Use of Market Based Information:

It was asked to 144 respondents who provided their intentions regarding marketing produce based on market price information, if they plan to market their produce based on market price information received from Agro advisory. About 87 respondents (60.4%) indicated that they plan to market their produce based on the market price information they receive from Agro advisory. This suggests that a majority of respondents are willing to use this information to make marketing decisions and 57 respondents (39.6%) reported that they do not plan to market their produce based on the market price information provided by Agro advisory. The data suggests that there was interest among a significant portion of respondents in utilizing market price information from Agro advisory to make informed decisions about how they market their agricultural produce. This indicates the potential value of such information in helping farmers optimize their selling strategies.

Preferred Modes for Receiving Agro-met Advisory:

The beneficiaries were asked respondents about their preferred mode for receiving Agro-met advisory. A response from 144 respondents are as follows:

SMS on Mobile: 94 respondents (65.3%) prefer to receive Agro-met advisory through SMS on their mobile phones. SMS messages are a widely used and convenient mode for timely information delivery.

Through Mobile App: 12 respondents (8.3%) indicated that they prefer to receive the advisory through a mobile app. Mobile apps can provide interactive and customized information.

Through WhatsApp: 36 respondents (25.0%) mentioned that they prefer to receive Agro-met advisory through WhatsApp. WhatsApp is a popular messaging platform and can facilitate easy communication.

Newspaper: 1 respondent (0.7%) prefers to receive the advisory through newspapers. This is a traditional mode of information dissemination.

Interactive Voice Response (IVR): 1 respondent (0.7%) prefers to receive the advisory through interactive voice response systems, which can provide audio information.

It suggests that mobile-based communication methods, such as SMS and WhatsApp, are the preferred modes for receiving Agro-met advisory among the surveyed respondents. These modes offer real-time and convenient access to agricultural information.

Expected Frequency for Receiving Agro-met Advisory:

As a part of CM-VII survey questionnaire it was asked to the respondents about the frequency at which they expect to receive Agro-met advisory. From the response from 144 beneficiaries it was found that the majority (52.1%) indicated that they expect to receive Agro-met advisory on a daily basis.

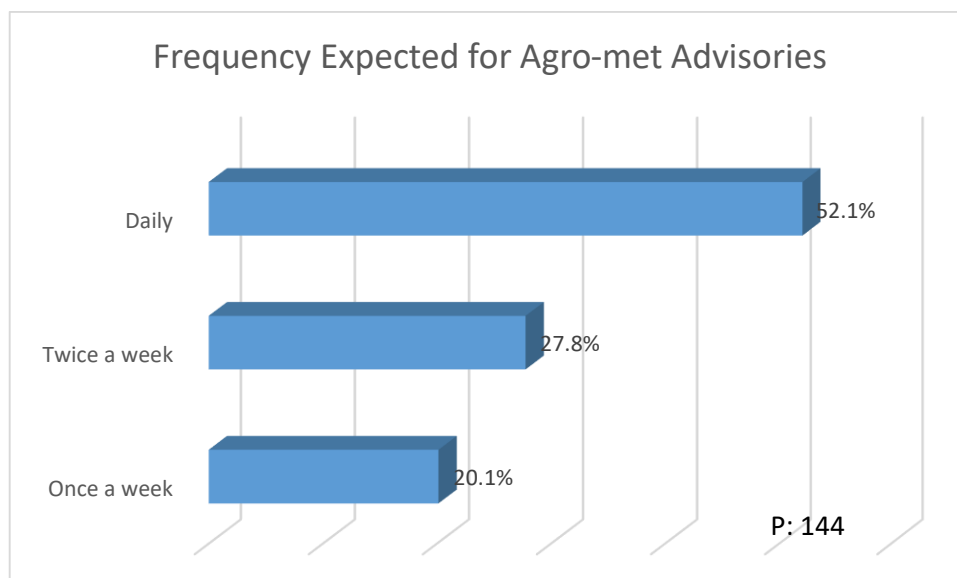


Figure 36: Frequency expected for Agro-met advisories

This suggests a strong preference for real-time and daily updates among this group. A significant portion (27.8%) expects to receive advisory twice a week, indicating that they desire

more frequent updates than just once a week. A smaller percentage (20.1%) expects to receive advisory once a week, indicating that some respondents are comfortable with less frequent communications. In summary, the data suggests that there is a diversity of expectations among respondents regarding the frequency of receiving Agro-met advisory. While a substantial portion prefers daily updates, others are content with less frequent communication, such as twice a week or once a week. Tailoring the advisory frequency to individual preferences may be important for effective communication.

Agriculture-Related Information for the proposed Mobile App:

As a part of CM-VII survey a question was asked to the beneficiaries about the agriculture-related information or advisory they would like to receive if a mobile app is developed. A multiple answer of 1069 response was generated from the survey.

Table 23: Agriculture related information for Mobile App

S.No.	Agriculture related information for Mobile App	Frequency	
		Total	Percent
	Total	1069	100.0%
1	Climate resilient technology advisory	223	20.9%
2	Weather advisory	176	16.5%
3	Soil nutrient advisory	116	10.9%
4	Natural resource management advisory	79	7.4%
5	Crop (Food/ Cash/ Plantation) advisory	57	5.3%
6	Irrigation advisory	77	7.2%
7	Certified seed advisory	61	5.7%
8	Fertilizer (chemical and bio) advisory	51	4.8%
9	Pesticides (chemical and bio) advisory	59	5.5%
10	Crop pest/ disease advisory	47	4.4%
11	Crop residue disposal advisory	18	1.7%
12	Organic farming advisory	23	2.2%
13	Horticulture advisory	13	1.2%
14	Poultry/ Goatry/ Fishery advisory	11	1.0%
15	Markets for agri-produce advisory	25	2.3%
16	Agri-business advisory	18	1.7%
17	Environment safeguards advisory	15	1.4%

Respondents had a diverse interest in agriculture-related information, ranging from climate-resilient technology and weather advisory to specific guidance on soil nutrient management, crop choices, and pest control. There was a demand for information that can help farmers make informed decisions and adopt sustainable agricultural practices. The data suggests that a comprehensive mobile app offering a wide range of agriculture-related advisory services could be valuable to a broad audience of farmers. It was observed that the preferences of respondents reflected the need for tailored, accessible, and technology-driven agricultural information and advisory services to support farming practices and decision-making.

5. Analysis from Saline Affected Villages

The Purna valley of Vidarbha region was an east-west elongated basin with slight covering to the south occupying the part of Amravati, Akola and Buldhana districts. The development of salinity in these soils had been attributed to the semi-arid climatic conditions that have induced the pedogenetic process of depletion of calcium ions from the soil solution in the form of calcium carbonate. This has resulted in an increase in salinity in the area.

Awareness of Salinity Issues:

As per CM-VII Survey, beneficiaries from Kharpan areas were asked about their awareness of salinity issues in the soil. A total of 121 beneficiaries were interviewed in Project area. In response about 102 respondents (84.3%) answered that they are aware of salinity issues in the soil in their area, while 19 respondents (15.7%) said that they are not aware of salinity issues in the soil. This is a relatively smaller percentage, suggesting that a significant portion of respondents does have awareness of the issue.

With regard to question asked to beneficiaries whether they had received information regarding the treatment of soil as part of the project. Out of 121 beneficiaries, only 27(22.3%) answered "Yes," indicating that they have received information regarding the treatment of soil as part of the project. This suggests that a relatively small portion of respondents has been provided with information about soil treatment as part of the project. While, 94 respondents (77.7%) answered "No," indicating that they have not received information regarding the treatment of soil. The data highlights that a significant portion of surveyed respondents had not received information about soil treatment as part of the project, suggesting potential opportunities for enhancing knowledge and practices related to soil management in the surveyed areas.

Recommended Soil Treatments:

From the 45 beneficiaries, who received information on salinity treatment, question was asked about the treatments recommended for soil management as part of the project. The most common soil treatment recommended to beneficiaries was the "Application of Gypsum," with 22 respondents (48.9%) indicating that this treatment was advised. Gypsum can be used to improve soil structure and reduce salinity. A smaller percentage of beneficiaries (11.1%) mentioned that they were recommended to "Introduce inter-cropping" as a soil management practice. Inter-cropping involves planting two or more crops simultaneously in the same field. Approximately 20.0% of respondents reported receiving recommendations for the "Application of Micronutrients." Micronutrients are essential for plant growth and development. Another 20.0% of respondents stated that they were advised to apply a "Balanced dose of NPK (Nitrogen, Phosphorus, Potassium) and Zinc" to their soil. These nutrients are critical for plant nutrition.

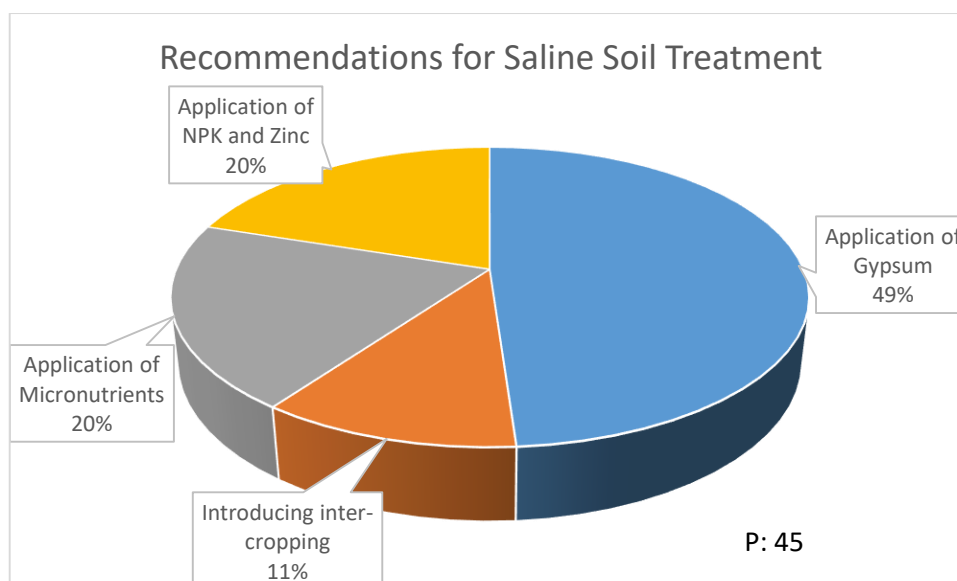


Figure 37: Recommendations for Saline Soil Treatment

The data provides insights into the specific soil treatment recommendations provided to beneficiaries, highlighting a range of practices aimed at enhancing soil quality and agricultural productivity to increase Climate Resilience activities in *Kharpan* areas.

Soil Testing:

In response to question on whether they have conducted soil testing. Out of 121 respondents 19 respondents (15.7%) answered that they have conducted soil testing. This suggests that a relatively small percentage of surveyed respondents have engaged in soil testing and 102 respondents (84.3%) answered that they have not conducted soil testing. This is a significantly larger percentage, indicating that the majority of respondents have not tested their soil.

Following Soil Health Card Suggestions:

As a part of questionnaire it was asked respondents whether they follow the suggestions mentioned on the soil health card. The survey had a total of 19 respondents who have conducted soil testing and received soil health cards, of which 15 respondents (78.9%) answered that they follow the suggestions mentioned on the soil health card. This suggests that a majority of the respondents who have received soil health cards are actively implementing the recommendations provided. While, 4 respondents (21.1%) answered that they do not follow the suggestions mentioned on the soil health card. This is a smaller percentage, indicating that a minority of the respondents are not implementing the recommendations. In summary, the data indicates that the majority of respondents who have received soil health cards are receptive to and actively implementing the suggested soil management practices, highlighting the potential effectiveness of soil health cards in

promoting improved soil management and agricultural practices among the surveyed respondents.

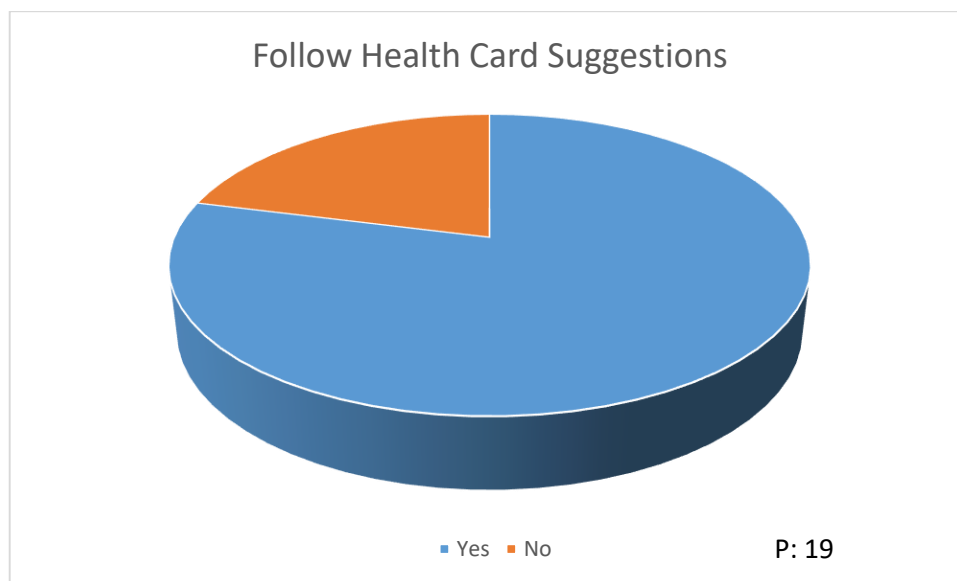


Figure 38: Follow Health card suggestions

Following No Tillage Practice:

In *Kharpan* area, beneficiaries were asked whether they follow the practice of No Tillage in their farming. No Tillage is a conservation farming practice where the soil is left undisturbed or minimally disturbed during planting, helping to improve soil health and reduce erosion. From the total 121 beneficiaries only 2 respondents (1.7%) indicated that they follow the practice of No Tillage in their farming, while, the vast majority of respondents, 119 (98.3%), answered that they do not follow the practice of No Tillage in their farming. In summary, the data suggests that No Tillage is not a commonly practiced farming method among the surveyed respondents. Promoting and educating farmers about the benefits of No Tillage and other conservation farming practices may be an area of potential improvement in sustainable agriculture initiatives in *Kharpan* areas for Climate Resilience Agriculture.

Special Technology Demonstrated in FFS:

It was also asked whether any special technology was demonstrated in Farmer Field Schools (FFS) for the *Kharif* (monsoon) cropping season. Out of total 51 respondents from the *Kharif* (monsoon) area, 19 respondents (37.3%) answered that special technology was demonstrated in FFS for the *Kharif* cropping season, while the majority of respondents, 32 (62.7%), indicated that no special technology was demonstrated in FFS for the *Kharif* season according to their knowledge. This suggests that while some respondents from the *Kharif* area were aware of special technology demonstrations in FFS, the majority did not have information about such activities. It also highlights the potential need for improved communication and

outreach to ensure that agricultural innovations and technologies are effectively disseminated to all interested farmers in the *Kharpan* region.

Technologies Demonstrated:

In NDKSP, Farmer Field Schools play an important role in imparting training and motivation to farmers for adopting climate resilient technologies. As a part of questionnaire beneficiaries were asked about the technologies that were demonstrated during Farmer Field Schools (FFS). From a response from 88 beneficiaries who attended FFS and received demonstrations of various agricultural technologies, 19 respondents (21.6%) mentioned that the technology of "Furrow across to the slope" was demonstrated during FFS, 8 respondents (9.1%) reported that the "Square Bed" technology was demonstrated, 4 respondents (4.5%) mentioned that CCT was demonstrated. This is a soil and water conservation technique commonly used on hilly or sloping terrain, 13 respondents (14.8%) indicated that irrigation technology was demonstrated, 16 respondents (18.2%) reported that the "Application of Soil Amendments" was demonstrated, 12 respondents (13.6%) mentioned that BBF technology was demonstrated. Broad bed furrow is an important intervention in CRA. While, 2 respondents (2.3%) noted "Other" technologies that were demonstrated. The specific technologies under "Other" were not specified in the data.

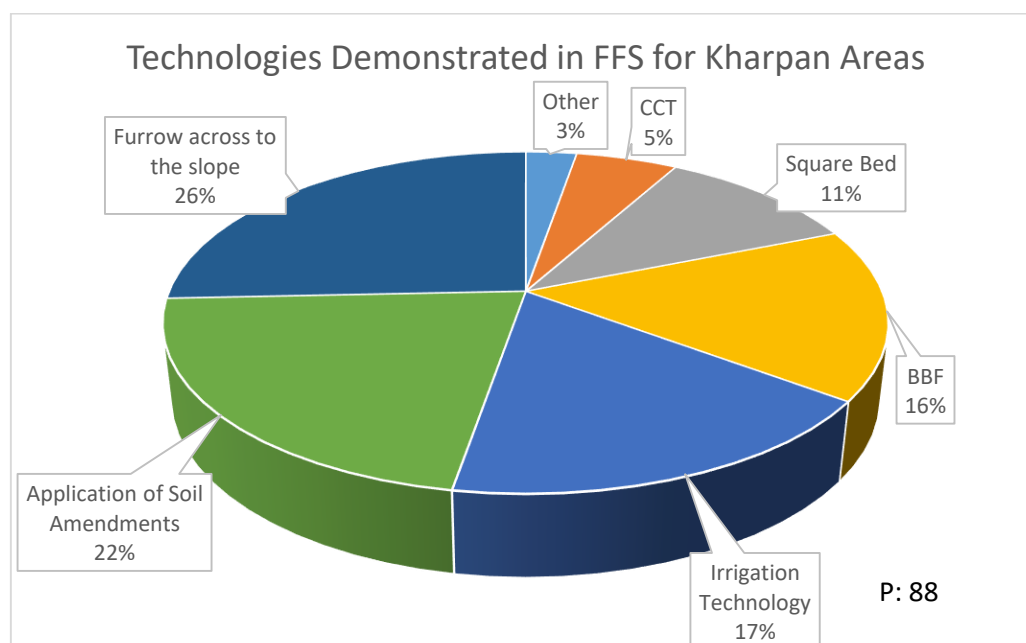


Figure 39: Technologies demonstrated in FFS in Kharpan areas

In summary, the data highlights the diversity of technologies demonstrated during FFS sessions, which can play a crucial role in improving agricultural practices and sustainability in CRA in Kharpan areas. However, it also indicates that not all respondents received demonstrations of these technologies during their FFS experiences.

Adoption of Demonstrated Technologies:

From the 37 beneficiaries who attended FFS and received demonstrations of various agricultural technologies, it was asked whether they have adopted the technologies that were demonstrated to them during Farmer Field Schools (FFS). About 18 respondents (48.6%) answered that they had adopted the demonstrated technologies, while 19 respondents (51.4%) answered that they had not adopted the demonstrated technologies. This is a slightly larger percentage, indicating that a majority of the respondents have not yet implemented these technologies.

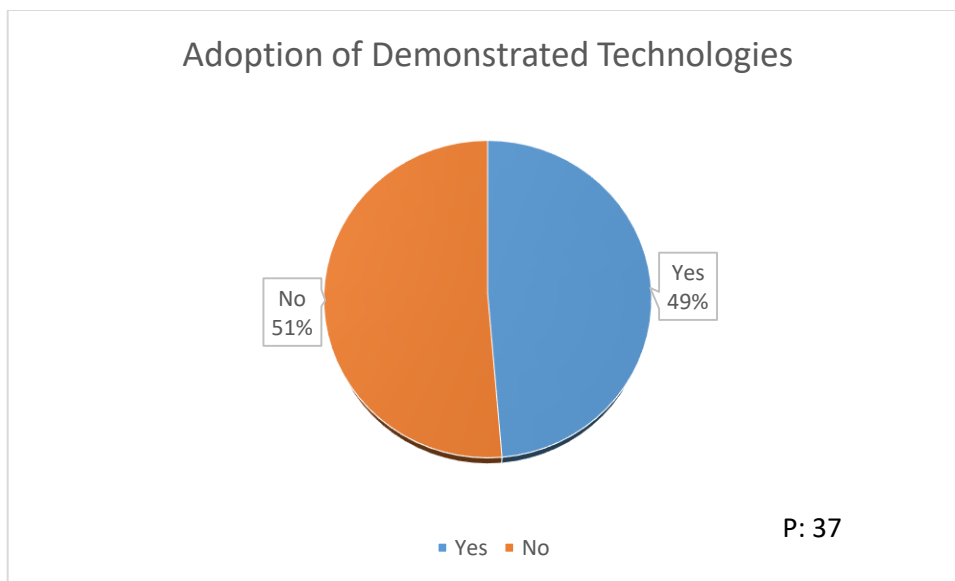


Figure 40: Adoption of Demonstrated Technologies

It suggests that while a significant portion of respondents who attended FFS have adopted the demonstrated technologies, there is still room for increased adoption among the surveyed group. This may require further support, resources, or information dissemination to encourage wider adoption of these beneficial agricultural practices in the *Kharpan* region.

Reasons for Not Adopting Demonstrated Technology:

The survey had a total of 52 respondents who did not adopt the demonstrated technology. These are the reasons cited for non-adoption of demonstrated technologies:

Proper Information Not Provided: 15 respondents (28.8%) mentioned that one of the reasons for not adopting the demonstrated technology was that proper information was not provided. This indicates that a significant portion of respondents felt that they lacked sufficient information about the technology.

Access to Technology Challenging: 17 respondents (32.7%) cited the challenge of accessing the technology as a reason for not adopting it. This could include difficulties in obtaining the necessary equipment or resources.

Lack of Technical Know-How: 8 respondents (15.4%) reported that they did not adopt the technology due to a lack of technical know-how. This suggests that some respondents felt they did not have the necessary skills or knowledge to implement the technology.

Unviability of Improved Farm Implements: 9 respondents (17.3%) mentioned that the improved farm implements were not viable for them. This may indicate economic or practical challenges in adopting certain technologies.

Other: 3 respondents (5.8%) provided reasons categorized as "Other." The specific reasons under "Other" were not specified in the data.

In summary, the data suggests that barriers to technology adoption are multifaceted, including issues related to information, access, technical capacity, and economic viability. Addressing these barriers may be important for promoting the wider adoption of demonstrated agricultural technologies for CRA in the *Kharpan* region.

Groundwater Salinity:

As a part of Survey beneficiaries were asked whether the groundwater in their area is saline or not. Out of 121 respondents, 91 (75.2%) answered that they perceive the groundwater in their area to be saline. This suggests that a significant majority of the respondents believe that the groundwater has a high salt content and 30 respondents (24.8%) answered that they do not believe the groundwater in their area is saline. This is a smaller percentage, representing those who do not perceive salinity issues with their groundwater. The data indicates that a significant portion of the surveyed respondents believe that groundwater salinity is a concern in their area. Addressing salinity issues may be important for sustainable agricultural practices and water resource management in these communities.

Methods of Irrigation Used:

As a part of CM-VII Survey, beneficiaries were asked about the methods of irrigation used in the Kharpan villages. The survey had a total of 135 respondents from Kharpan villages, out of which 45(33.3%) reported using drip irrigation as a method of irrigation, 46(34.1%) mentioned using sprinkler irrigation, 1 respondent (0.7%) reported using flooding as a method of irrigation, 1 respondent (0.7%) mentioned using an "Other" method of irrigation and 42 respondents (31.1%) indicated that they rely solely on rainfed agriculture, meaning they do not use any additional irrigation methods and depend on rainfall for crop irrigation.

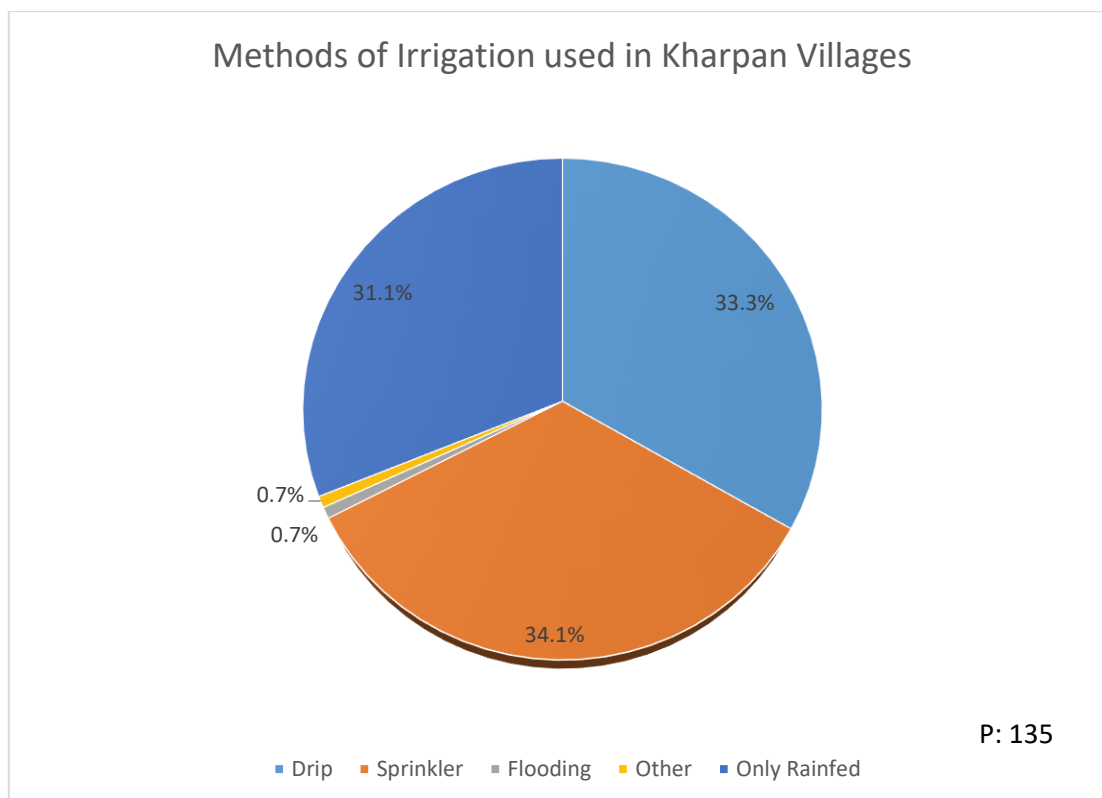


Figure 41: Methods of Irrigation used in Kharpan villages

Reasons for Using Specific Irrigation Methods:

It was also asked about the reasons from 151 beneficiaries for using their specific irrigation methods. 99 respondents (65.6%) mentioned that they use their chosen irrigation method because they are aware of salinity issues. This suggests that a significant majority of respondents consider salinity as a key factor in their choice of irrigation method, 36 respondents (23.8%) stated that they selected their irrigation method based on the observation of fellow farmers. This indicates that peer influence and learning from others play a role in their decision-making and 13 respondents (8.6%) reported using their irrigation method because they received technical information from the Agriculture Department. This suggests that official agricultural guidance influenced their choice. While, 3 respondents (2.0%) provided "Other" reasons for using their chosen irrigation method. The specific reasons under "Other" were not specified in the data.

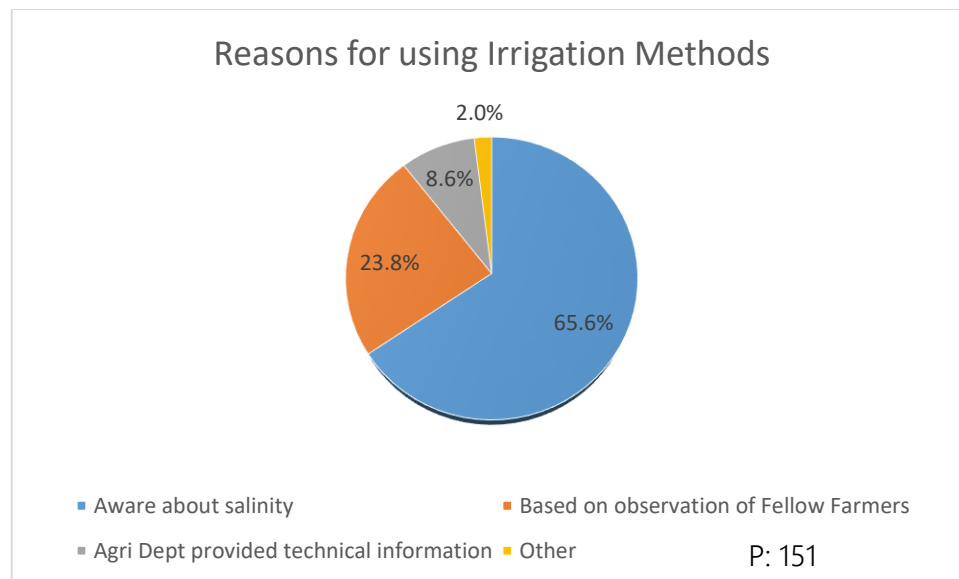


Figure 42: Reasons for using irrigation methods

This suggests that addressing salinity issues and learning from local peers are prominent factors in the decision-making process regarding irrigation methods in *Kharpan* villages. Additionally, some respondents value technical guidance provided by the Agriculture Department.

Awareness of Well Recharge:

As per questionnaire respondents were asked whether they are aware of well recharge. The data shows that a significant majority (62.0%) of the surveyed respondents were not aware of well recharge. A minority (38.0%) of the respondents are aware of the concept of well recharge.

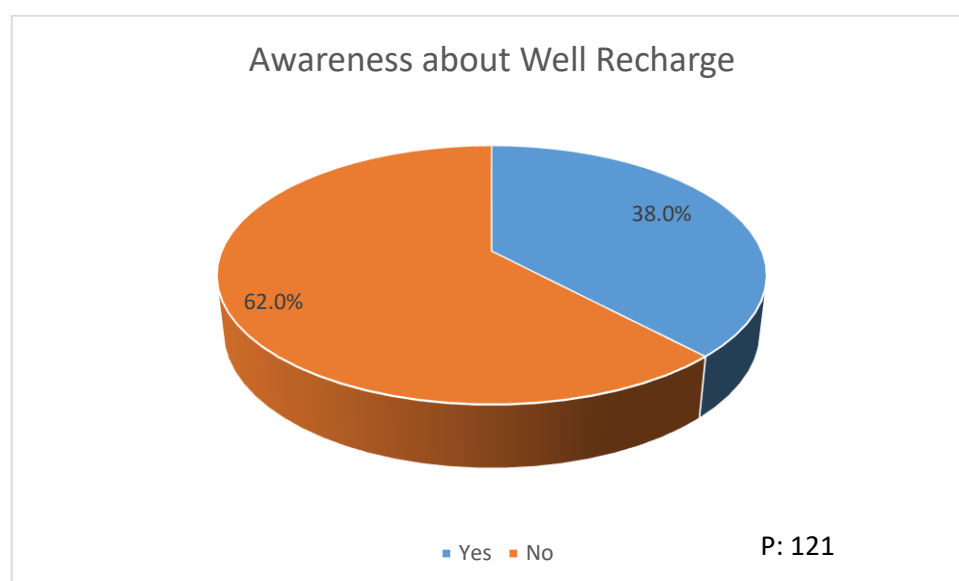


Figure 43: Awareness about Well Recharge

It suggests that there was a need for awareness and education on the topic of well recharge among the surveyed population, as a substantial portion of respondents are not familiar with it. Promoting knowledge and understanding of well recharge could be beneficial for sustainable water resource management in the area.

When asked to these 121 respondents, whether they received information about recharging open wells as part of the project, 45 respondents (37.2%) stated that they received information about recharging open wells as part of the project. This indicates that a minority of the respondents received information on this topic, 76 respondents (62.8%) reported that they did not receive information about recharging open wells as part of the project. This is a larger percentage, signifying that the majority of the respondents did not receive such information. The data suggests that there was room for increased dissemination of information and awareness about the importance and methods of recharging open wells, as a substantial portion of respondents did not receive such information as part of the project. Promoting knowledge about well recharge could contribute to better groundwater management in the *Kharpan* area promoting Climate Resilience.

Resolution of Irrigation Issues Due to Salinity:

It was asked to the respondents whether irrigation issues due to salinity have been resolved. From the total of 121 respondents, 28(23.1%) reported that their irrigation issues related to salinity have been resolved, while 93 respondents (76.9%) stated that their irrigation issues due to salinity have not been resolved. This is a larger percentage, signifying that the majority of the respondents continue to face salinity-related irrigation challenges. It suggests that addressing salinity-related irrigation problems remains a significant challenge for the majority of the respondents, as most of them have not seen a resolution of these issues. Efforts to mitigate salinity and improve irrigation practices may be needed to address this concern effectively.

Irrigation Issues Due to Salinity:

In response to question about the irrigation issues they face due to salinity. From the total of 139 respondents, 45 (32.4%) mentioned that water logging is an irrigation issue that persists due to salinity, 70 (50.4%) reported poor production as an irrigation issue that continues to be a problem due to salinity, 21 (15.1%) indicated that the increased cost of cultivation is a salinity-related irrigation issue. It can be concluded that salinity-related irrigation issues have multiple dimensions, including reduced crop production, water logging, and increased cultivation costs. Addressing these challenges may require targeted interventions and solutions to improve agricultural practices and water management in affected areas.

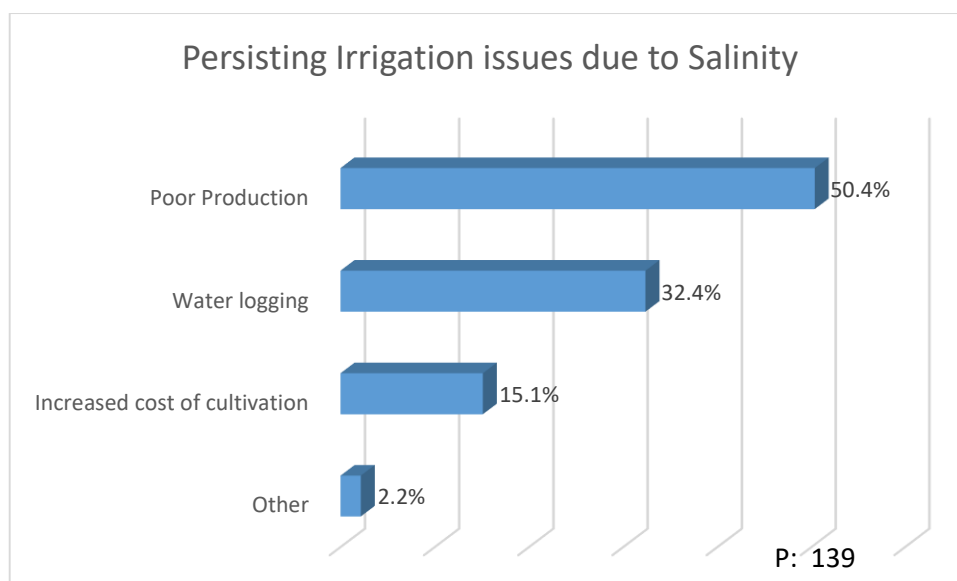


Figure 44: Persisting irrigation issues due to Salinity

Recommendation by Agronomist for Saline Soil Reclamation

- Application of gypsum 2.5t/ha as an amended with application of FYM .
- In-situ moisture conservation practices such before commencement of rains such as square basins 20 x 20 m, opening of furrows across the slope, opening of contour furrows should be promoted.
- Sub surface tillage with the help of sub-soiler to increase the permeability of soil and to reduce surface runoff and losses of soil nutrients.
- Opening of alternate contour furrows after 2 or 3 rows of crops should be opened after 30 days of sowing to enhance crop productivity and enhanced rain water.
- Contour cultivation with opening of ridges and furrows after 30 days of sowing to enhance crop productivity and enhanced rain water.
- Cultivation of crops with broad bed furrows for in-situ moisture conservation and higher productivity in rainfed areas in saline tract.
- Water conservation ditches upto 1.5% slope cross section (1.60 m²) in deep black soils across the slope or on contour 75 to 100 m HI for improved growth and yield for dryland fruit trees and intercrop in rainfed conditions.
- Adoption of farm pond technologies and use of protective irrigation from harvested rain water and natural resource management activities like widening and deepening of drain on communal basis.

6. Socio-Economic Profile of Respondents

As part of the CM-VII survey, beneficiaries were asked about household information from both project and control villages. Social-economic details were captured as part of the household information.

Gender of the Beneficiaries:

Out of total 480 beneficiaries in Project area, 369 respondents (76.9%) were identified as male, which is the larger percentage in the dataset and 111 respondents (23.1%) were identified as female, representing a smaller but still significant portion of the respondents. The data highlights a gender imbalance among the beneficiaries, with a majority being male. Understanding the reasons behind this gender disparity and addressing potential gender-related challenges or opportunities within the project may be important for ensuring equitable project outcomes and impacts.

Whether the Beneficiary is the Head of the Family:

Out of 480 beneficiaries, 352 respondents (73.3%) indicated that the beneficiary was the head of the family. This represents a significant majority of the surveyed population and 128 respondents (26.7%) indicated that the beneficiary was not the head of the family. While smaller in number, this is still a notable portion of the respondents. Understanding the dynamics and implications of these family structures may be important for tailoring project interventions and support to address the specific needs and circumstances of different beneficiary households.

Gender of the Head of the Family:

As a part of the survey it was asked to the respondents about the gender of the head of the family. Out of total 480 beneficiaries 446 respondents (92.9%) identified the head of the family as male, which is the predominant gender among the heads of the family in the dataset and 34 respondents (7.1%) identified the head of the family as female, representing a much smaller but still existing portion of the respondents. The data highlights a gender imbalance in the roles of heads of the family, with the vast majority being male.

Ownership of Mobile Phones by Women Heads of Family:

From the 34 women headed family, it was asked whether women who are heads of their families have their own mobile phones. It was recorded that 11 respondents (32.4%) have their own mobile phones. This represents a minority of the surveyed women heads of families, while 23 respondents (67.6%) answered that they do not have their own mobile phones. The

majority of the surveyed women heads of families do not own mobile phones. In summary, the data suggests that there is a notable lack of mobile phone ownership among women who are heads of their families. Access to mobile phones can be an important tool for communication, access to information, and participation in various activities, so addressing this disparity may be important for ensuring equitable access to resources and opportunities for these women.

Social Category of the Beneficiaries:

In CM-VII Survey it was recorded that 42 beneficiaries (8.8%) were from General/Open category, 320 (66.7%) from Other Backward Class category, 45(9.4%) from Scheduled Caste, 25(5.2%) belonged to the Scheduled Tribe, 38(7.9%) were from Nomadic Tribes and 10(2.1%) mentioned other social categories not covered in the provided options.

Marital Status of the Beneficiaries:

Out of 480 Project beneficiaries 36(7.5%) identified beneficiaries as unmarried, 435 respondents (90.6%) were married, 9(1.9%) were widows. Understanding the marital status of beneficiaries can be important for tailoring project interventions and support to address the specific needs and circumstances of different beneficiary groups.

Educational Qualifications of the Beneficiaries:

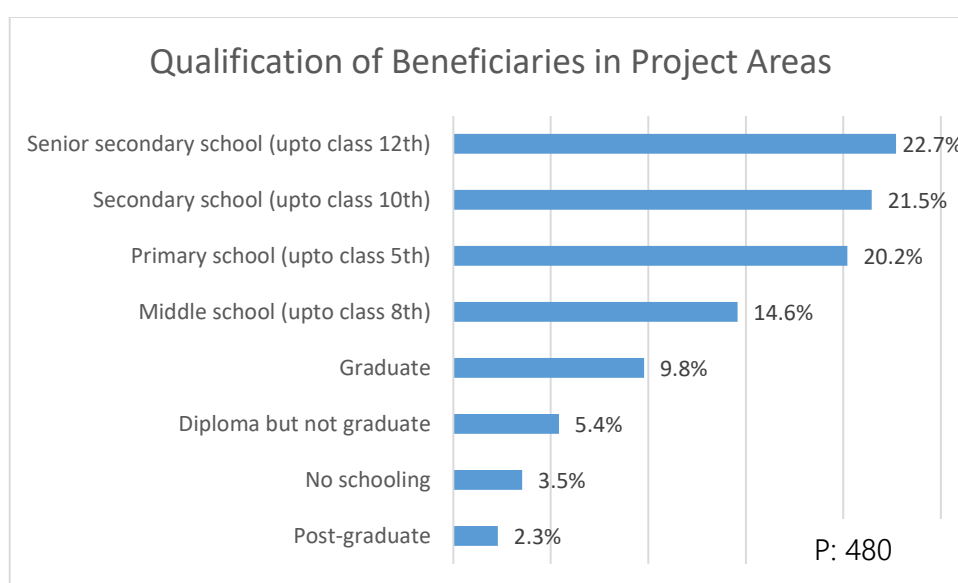


Figure 45: Qualifications of beneficiaries in Project areas

In CM-VII survey it was observed that a significant portion of beneficiaries have completed at least primary school (20.2%), middle school (14.6%), secondary school (21.5%), or senior secondary school (22.7%). There were also beneficiaries who have pursued higher education, with some holding diplomas (5.4%), undergraduate degrees (9.8%), or post-graduate qualifications (2.3%). While a small number of beneficiaries have had no formal schooling

(3.5%). The data reflects a wide spectrum of educational qualifications among the beneficiaries, with varying levels of formal education attainment.

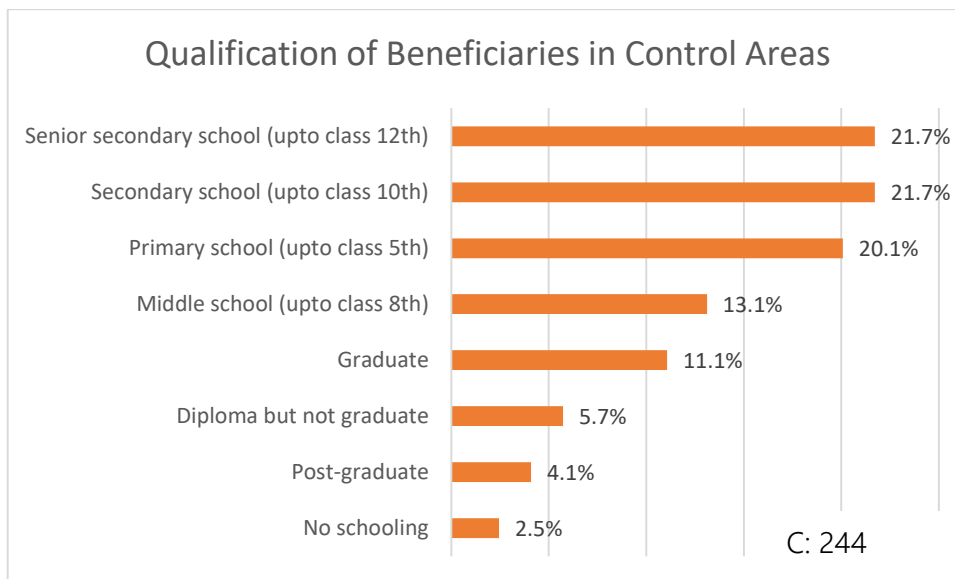


Figure 46: Qualification of beneficiaries in Control areas

The data from Control Villages also demonstrates diverse range of educational qualifications among the beneficiaries, similar to the pattern similar to Project areas. A significant portion of beneficiaries in control areas have completed at least primary school (20.1%), middle school (13.1%), secondary school (21.7%), or senior secondary school (21.7%). There are also beneficiaries in control areas who have pursued higher education, with some holding diplomas (5.7%), undergraduate degrees (11.1%), or post-graduate qualifications (4.1%). A small number of beneficiaries in control areas have had no formal schooling (2.5%).

Categorization of Households:

In CM-VII it was observed that in Project areas out of 480 beneficiaries, 273 (56.9%) indicated that their households belong to the APL category, which generally means they are not classified as living below the poverty line, while 159 (33.1%) reported that their households were categorized as BPL, signifying that they are recognized as living below the poverty line. It was also recorded that 48 respondents (10.0%) stated that they do not know the categorization of their household. In summary, the data provides insights into the categorization of households as APL or BPL, with the majority being in the APL category but a significant number falling into the BPL category. Understanding the economic status of households is important for targeting and tailoring poverty alleviation and development initiatives effectively.

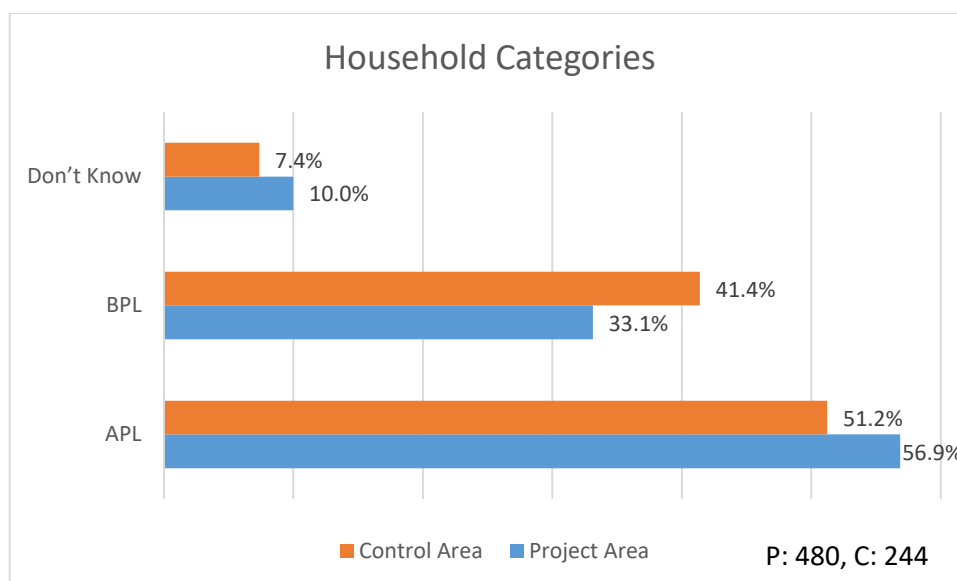


Figure 47: Household Categories

While in case of Control areas out of 244 household surveys, 125 (51.2%) belonged to the APL category, 101(41.4%) were categorized as BPL and 18(7.4%) stated that they do not know the categorization of their household's poverty status.

Family Structure:

In Project areas out of 480 beneficiaries, 121(25.2%) indicated that their families are nuclear families, which typically consist of parents and their dependent children living together as a single household unit and 359(74.8%) reported that their families are joint families or extended families, which typically include multiple generations of a family living together as a single household unit. The data highlights the prevalence of joint families or extended families among the surveyed population, indicating a significant presence of multigenerational households.

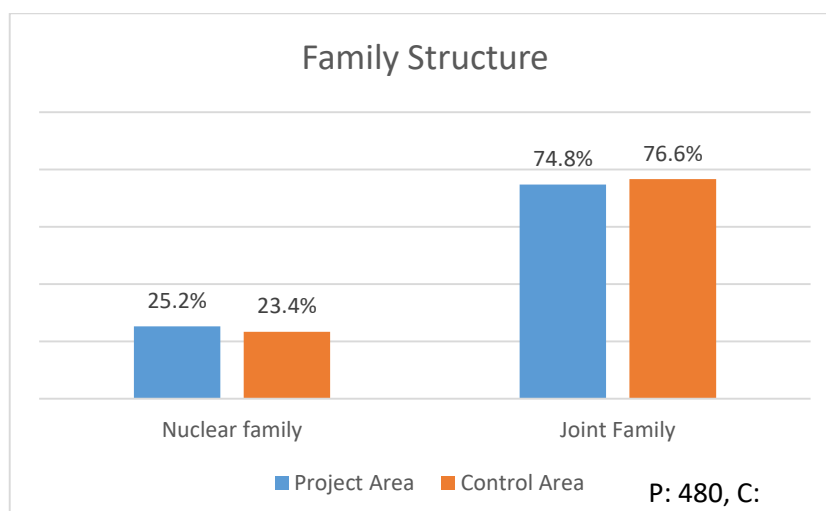


Figure 48: Family Structure

When compared to Control Areas, out of 244 households, 57 (23.4%) indicated that their families are nuclear families and 187 (76.6%) reported that their families are joint families or extended families. Understanding the family structure is important for tailoring project interventions and support to address the specific dynamics and needs of different family types.

Source of Income:

In CM-VII Survey we also collected the source of income of the beneficiaries. In the project area, farming and agriculture are the primary sources of income, accounting for 75.8% of the respondents' income. In the control area, farming and agriculture also play a significant role, though slightly less prominent at 71.2%. This indicates that agriculture is a major income source in both areas. Goat farming contributes to income, with 1.7% of respondents in the project area and 2.6% in the control area involved in goat farming as a source of income. Dairy farming was another source of income, with 1.4% in the project area and 1.0% in the control area deriving income from dairy-related activities. Non-agriculture labour contributes to income, with 2.7% in the project area and 3.2% in the control area engaged in non-agricultural labour. Some respondents work as agricultural labourers, accounting for 12.0% in the project area and a higher 16.7% in the control area. Skilled workers in various trades, including tailoring, masonry, electrician, plumbing, carpentry, welding, and driving, contribute to income. This category makes up 1.2% in the project area and 0.3% in the control area. A small percentage of respondents work as salaried workers, including roles like teachers and *Anganwadi* workers (AWW). They make up 1.0% in the project area and 0.6% in the control area. Micro-enterprises such as *kirana* shops, *dhabas* (roadside eateries), mobile shops, ferry shops, etc., contribute to income. They make up 1.9% in the project area and 2.2% in the control area. This category includes other sources of income not specified in the provided options. It accounts for 0.9% in the project area and 0.6% in the control area. Contractual or task-based work was a source of income for 0.7% of respondents in the project area and 0.3% in the control area. NTFP Collection (Non-Timber Forest Product Collection) was a minor source of income in both areas, with 0.3% in the project area and a slightly higher 1.0% in the control area. This suggests that a small portion of respondents in both areas engage in collecting non-timber forest products for income. Unskilled wage labour, such as construction work and brick kiln labour, accounts for a small portion of income in both areas, with 0.3% in both the project and control areas. Overall, the data indicates that while farming and agriculture are significant sources of income in both areas, there was a diversity of income sources, including non-agricultural labour, agricultural labour, micro-enterprises, and others. Understanding the various sources of income was crucial for project planning and

development interventions to support and improve the livelihoods of the surveyed population in both the project and control areas

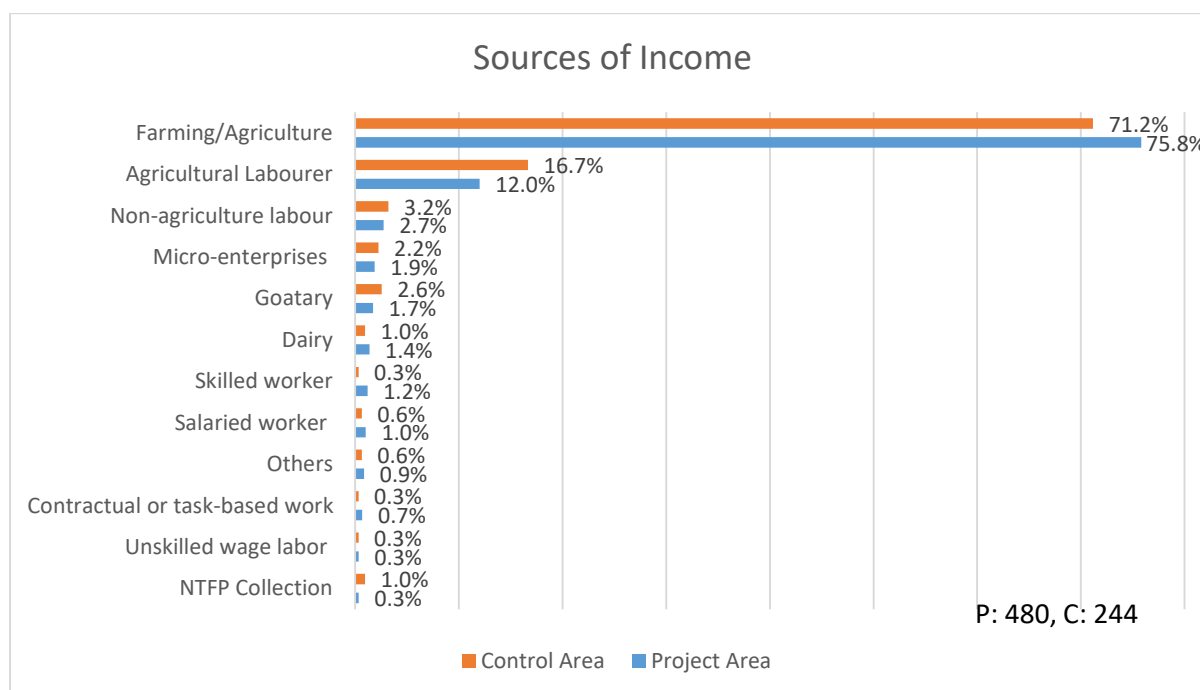


Figure 49: Sources of Income

Membership in Self-Help Groups

SHGs are community-based groups formed to promote collective savings and provide access to financial services and support for income-generating activities. It is an important component of promoting Climate Resilience in Agriculture. As a part of questionnaire beneficiaries were asked whether there is any member in their household who is part of a Self-Help Group (SHG). In Project area, out of 480 respondents, 211(44.0%) answered "Yes," indicating that there was at least one member in their household who was a part of a Self-Help Group (SHG), while, 269(56.0%) answered "No," indicating that there was no member in their household who is part of an SHG. As compared to Control areas, out of 244 beneficiaries surveyed, 99(40.6%) indicated that there is at least one member in their household who is part of an SHG, while 145(59.4%) said that there is no member in their household who is part of an SHG. The data reflects a diversity of participation in Self-Help Groups within the surveyed population, with a notable percentage of households having at least one member involved in such groups. Participation in SHGs can have implications for financial inclusion, social support, and contribution to Climate Resilience activities, among other factors.

Membership in Farmers Producer Companies (FPCs):

When asked about participation in FPCs, in Project area out of 480 beneficiaries, 82 (17.1%) said that there was at least one member in their household who was part of an FPC, while

398(82.9%) replied that there are no member in their household who is part of an FPC. When compared to Control areas, out of 244 households surveyed, 39(16.0%) answered that there is at least one member in their household who is part of an FPC, while 205(84.0%) said that there is no member in their household who is part of an FPC. Understanding FPC membership is important for assessing the extent of collective marketing and farmer empowerment initiatives in these areas and also helps in strengthening the input and output linkages.

Membership in VCRMC:

VCRMCs are community-based committees that work on climate resilience and adaptation measures at the village level and is an important intervention in the Project. Out of 480 beneficiary households, 30(6.3%) answered indicated that the beneficiary was a part of the Village Level Climate Resilience Committee (VCRMC), while 450 beneficiaries (93.8%) answered that the beneficiary was not part of the VCRMC. The data shows limited membership in the Village Level Climate Resilience Committee among the surveyed beneficiaries, with a relatively small percentage actively participating in this climate resilience initiative at the village level. Understanding the level of involvement in such committees can be important for assessing community engagement in climate resilience efforts.

Membership of Other Family Members in VCRMC:

As a part of Survey it was also enquired in questionnaire if any other member of their family is part of the Village Level Climate Resilience Committee (VCRMC). From the total 480 beneficiaries, only 28 respondents (5.8%) answered that there was at least one other family member who is part of the Village Level Climate Resilience Committee (VCRMC), while 452 respondents (94.2%) indicated that there were no other family members who are part of the VCRMC. In summary, the data reveals that while the primary beneficiary's involvement in the VCRMC is limited, there is a small percentage of cases where other family members are engaged in the committee.

Membership in District/Block-Level PRI:

Out of 480 beneficiaries in Project area, only 4 respondents (0.8%) answered that there is at least one member of their family who is part of a district/block-level *Panchayati Raj* Institution, while the vast majority of respondents, 476 in total (99.2%), answered that none of their family members are part of any district/block-level PRI. This indicates that family membership in district/block-level *Panchayati Raj* Institutions is very uncommon among the surveyed population, with only a tiny fraction reporting such involvement. Understanding this level of participation in PRI can provide insights into the engagement of the community in local governance structures.

Membership in Agriculture Produce Market Committees (APMCs):

As a part of CM-VII Survey it was asked whether any member of their household is part of any Agriculture Produce Market Committee (APMC). In Project area out of 480 beneficiaries, only 6 respondents (1.3%) answered "Yes," indicating that there is at least one member of their household who is part of an Agriculture Produce Market Committee (APMC). While, the overwhelming majority of respondents, 474 in total (98.8%), answered "No," indicating that none of their household members are part of any APMC. This indicates that household membership in Agriculture Produce Market Committees is very uncommon among the surveyed population, with only a tiny fraction reporting such involvement.

7. Expert Visits in CM-VII Survey

We had conducted an Expert team visit at RoPA on 11th to 13th September, 2023, as part of the Concurrent Monitoring VII survey. The team included officials from the State Department of Agriculture, such as the Agriculture Officer, the Cluster Assistant, the Agriculture Assistant, and the VCRMC members. In this report, we present the case studies of the villages we visited, along with the specific comments and suggestions from the Experts.

Case Study 1: Village Sangvi Mohadi, Ta-Akola, Dist-Akola

The field visit to village Sangvi Mohadi from district Akola was conducted on 12th September, 2023 along with Agriculture Supervisor, Cluster Assistant, Krushi Tai, PS Business and PS Procurement from Akola and experts from NABCONS.

According to Census 2011 information the location code or village code of Sangvi Mohadi village is 530002. Sangvi Mohadi village is located in Akola tehsil of Akola district in Maharashtra, India. It is situated 9km away from sub-district headquarter Akola (tehsildar office) and 9km away from district headquarter Akola. As per 2009 stats, Sangvi Mohadi is the gram panchayat of Sangvi Mohadi village. Marathi is the local language of the village.

The total geographical area of village is 266.88 hectares. Out of which only 50 ha is under protective irrigation. Sangvi Mohadi has a total population of 967 peoples, out of which male population is 480 while female population is 487. Literacy rate of Sangvi Mohadi village is 77.66% out of which 84.58% males and 70.84% females are literate. There are about 242 houses in Sangvi mohadi village.

As per Maharashtra Agricultural Census on Taluka wise agricultural data of crop cutting experiments from 2016-17 to 2020-21 (www.krishi.maharashtra.gov.in), the productivity of major field crops on an average of five years data in Akola taluka is 1084.32 kg/ha soybean, 1111.9 kg/ha cotton, 1283.96 kg/ha pigeon pea, 395.52 kg/ha green gram, 378.5 kg/ha black gram, 901.08 kg/ha sorghum. These crops were grown under rainfed situation during *Kharif* season.

Almost 80% area of the village is completely rainfed and very less area is cultivated under *Rabi* season, due to non-availability water resources structures. Open dug wells are the major source of protective irrigation which is applied to *Rabi* crops during critical growth stages to achieve maximum yield potential. However, due to introduction of PoCRA project water resources such as drip and sprinkler irrigation systems have been developed significantly in the Akola tehsil bringing more area under the cultivation in especially in *Rabi* season and thereby increasing the cropping intensity with more income over the year for farmers. It was observed that the productivity of major *Kharif* and *Rabi* crops has been improved significantly

in village Sangvi Mohadi due to introduction of project interventions and adoption of improved technologies and cultivars by the farmers. The detailed activities are summarized below.



Status of applications in village Sangvi Mohadi:

- 1) Total Registrations :171
- 2) Total applications: 93
- 3) Pre sanctions: 46
- 3) Direct Benefit Transfers: 20

Agricultural activities implemented in village Sangvi Mohadi:

The following activities under the PoCRA projects have been implemented in this village:

- 1) Sprinkler irrigation: 03
- 2) Drip: 01
- 3) Small ruminant: 08
- 4) Farm pond: 01
- 5) Host farmer: 05
- 6) Water Pump:01

Cropping Pattern:

During *Kharif* season approximately 60% of the area in the village is found to be under Cotton (BT cotton hybrids) cultivation whereas about 30% of area is under soybean cultivation. Pigeonpea is the third largest crop grown in village intercropped with Soybean in row proportion of Soybean + Pigeonpea (6:1)/(5:1) occupying about 5% of area whereas remaining 5% area is found to be under greengram, blackgram and sorghum. The Soybean crop of this area is in flowering to pod development stage, cotton crop is in flowering stage and pigeopea crop is in vegetative stage of growing. As per the version of farmers it was observed that average yield of cotton in village is about 8-10qt/acre, soybean (9-11 qt/acre) and pigeonpea is about 4-6qt/acre. The most widely adopted cultivars for cotton are Ajeet-155 and Ajeet-5

whereas in soybean are Phule Sangam, PDKV Amba and Ruchi. In Pigeopea the varieties adopted are Charu and Phule Rajeshwari. As regards the *Rabi* season, Chickpea, Wheat and *Rabi* Sorghum are the major crops cultivated in village. Soybean followed by Chickpea cropping sequence is adopted in the village on large scale and most remunerative cropping system as mentioned by the farmers.

Soil type and fertility status: The village soils are mostly black cotton soils falling under vertisols which are medium to deep in depth and saline soils. The farmers of this village Sangvi Mohadi have received soil health cards from Department of Agriculture, KVK's and Dr. PDKV, Akola Agriculture University as narrated by the Agriculture assistant. The black cotton soils are low in available nitrogen, medium to high in available phosphorus and high in available potassium. As regards the micro nutrients soils are found deficient in Sulphur, Zinc, Boron, Iron, Manganese and Copper. Being soybean is the major crop grown in the area farmers are extensively using chemical fertilizers like DAP, SSP and other mix fertilizers like 19:19:19 mix water soluble fertilizer for foliar spray during peak flowering to meet out the nutrient demands.

Management of soil fertility in saline tract: Salinity is concern for crop growth and drainage in the field. The major constraint reported is inability to apply heavy irrigations which makes these soils ill drained and accumulation of salts on upper layer of soil. As discussed the farmers reported they are using the FYM after every 2-3 years for maintaining soil fertility status. Availability of FYM is the issue of concern as it is not easily available nearby. Farmers reported growing of leguminous crops like soybean, green gram, black gram, red gram during *Kharif* season and chick pea in *Rabi* season in cropping system. It was found that farmers are aware about using the bio-fertilizers like *Rhizobium* culture in case of leguminous crops to enrich atmospheric nitrogen fixation capacity in soil which was suggested by the officials of Agriculture Department during. Application of micronutrients in recommended dose can substantially increase the crop productivity. Natural resource management activities enlisted below needs promoted among the farmers to overcome the issue of salinity:

Integrated disease and pest management: As regards the diseases *Kharif* and *Rabi* crops are affected by leaf reddening in cotton, mosaic in soybean, rust and smuts in wheat/sorghum which are most prevailing in recent years. Farmers mostly used the synthetic fungicides for control of diseases in most of the crops. But, in case of chickpea farmers were advised to use *Rhizobium* and *Trichoderma* and *Azotobacter* in wheat and other cereal crops grown. These bio-cultures are used for seed treatment which has resulted in significant decline in wilt leading to optimum plant population and significant increase in crop productivity. Sucking pest complex (aphids, jassid, thrips and white flies), boll worm complex in cotton (American, Pink and Spotted bollworms), pod borer, stem borer, leaf eating caterpillar, semi-looper are the major pests in soybean and other cash crops. Farmers reported the application of bio-pesticides like Neemark (*Nimoli ark/Nimoil*) with appropriate dose to control these pests

resulting into reduction in number of sprays and cost of cultivation as compared to the application of synthetic insecticides. Installed pheromone traps, at regular interval at the rate of 8-10/acre to controlled pod borer. In case of cotton bollworms pheromone traps were adopted by some of the farmers. Use of Pheromone traps in case of cotton resulted in significant reduction in cost of cultivation as compared to application of chemical pesticides like Propenofos/ Cloropyrifos/ Quinolfos at the rate of 20-25 ml per 10 litre of water. The farmers are advised to implement deep ploughing after every three years with a purpose to expose the soil to high temperature during summer through advisories given at weekly intervals to the farmers through the Agriculture Department. When asked about the crop residue management farmers reported they usually collect the leftover from the fields and burn them in field to control the pathogens and pests. Very few of them reported to use the remains of the crops for composting. Implementation of all these integrated nutrient management strategies has resulted in effective management of pest and diseases with significant reduction in cost of cultivation.

Implementation of Micro-irrigation:

1. Sprinkler irrigation

This activity has been found to be implemented in village Sangvi Mohoadi. Total 04 beneficiaries received benefit under PoCRA project. Sprinklers are used for providing the protective irrigation during the prolonged dry spells during *Kharif* and supplemental irrigation to *Rabi* crop during the critical growth stages as the water resources available here are very merge. Major source of irrigation is the dug wells and bore wells which are used for protective irrigation ome of the farmers (Sprinkler set beneficiary) form village Sangvi Mohadi viz; Shri.Rajesh Dhawale and Shri.Vijay Gore reported that they experienced increase in yield of about 30-40% in *Kharif* crops due to availability of protective irrigation through sprinkler. Increase in cropping intensity by 200% was observed because farmers are able to cultivate the Rabcrops which has doubled the cropping intensity and cropping pattern followed is soybean cultivated in *Kharif* followed by Chickpea in *Rabi*. Earlier, due to lack of irrigation facilities farmers were unable to cultivate their lands during *Rabi* but due to introduction of PoCRA the cultivation of second crop in *Rabi* is possible. The water saving through this system occurs to the extent of 16 to 70 % and increase in yield by 3 to 57 % over traditional method of surface irrigation in different agro-climatic situation in India (Indian National Commission on Irrigation and Drainage Report 1998.) the sprinkler irrigation system is being used by the farmers in soybean and cotton if the prolonged dry spell occurs due to uneven distribution of rainfall. It is portable and can used in undulating topography are the added advantages. Due to better ground water table in the vicinity of Sangvi Mohadi village the wells are having sufficient water which is effectively utilized for protective irrigations. Due to limited sources of water availability there is scope to promote the drip irrigation activity in this village.

2. Drip irrigation

The drip irrigation activity is adopted by only one farmer in the project and availed the benefit through PoCRA. The beneficiaries named Faruk Zamakhan Noor Ahmed Khan who applied drip irrigation to the cotton crop during kharif season. The variety used is Ajeet-155 and Rashi-659 with the spacing of 4 x 1.5 ft. He received technical guidance from Agriculture Assistant and Cluster assistant for technical know how about the installation and drawing of estimates of drip. He expected to harvest yield of 12-15 qt/acre of yield which was earlier found to be 7-8 qt/acre during the years subjected to the drought situations. The yield potential in cotton crop is doubled with significant water saving. Around Rs. 8000-10000/- per quintal rates for cotton were received with an gross income of around 96000/- per acre and net income of about 70000/- per acre with the benefit cost ratio of around 3.69 considering the lowest yield and rate. This higher benefit cost ratio is attributed with the higher yields due to installation of drip and higher rates received for cotton.

3. Use of water pump:

Shri. Shankar Shivram Wagh is only beneficiary farmer of water pump. He has installed water pump in open well. The depth of the open well is about 45 ft and diameter is 25 ft. The water level from the surface at present was 4-5 ft in the month of September. He purchased 5hp motor for lifting and irrigating the cotton crop during *Kharif* and used it for applying protective irrigation to the field crops during prolonged dry spells and during *Rabi* crop season. Farmers urged to initiate this activity again which at present situation is on hold. Sprinkler irrigation is installed for irrigating both the crops during *Kharif* and *Rabi*. Significant yield increase was reported by the beneficiary due to this project intervention and resource availability.

4. Farm pond: In this village, one farm pond with standard dimension of 30 m x 30 m x 3 m have been constructed by the farmer named Shri. Shaikh Sadiq Shaikh Razzaq with partial financial support from POCRA project. The harvested rainwater is utilized for irrigating the *Kharif* crops during prolonged dry spells and protective irrigation to *Rabi* crops which has significantly increased the yield and cropping intensity as reported by the farmer. Due to lack of water resources available in village the activity of farm pond needs to be promoted vigorously to brought more area under protective irrigation. When discussed about the low adoption of this activity the farmers reported the issue of high initial investment and seepage losses due to un-lining. To avoid such water loss, lining of the pond is essential. Growing of trees like *Moringa*, eucalyptus, teak, poplar and other tall growing trees, climber and creeper vegetable crops surrounding the farm pond is an effective measure to reduce water loss from open pond.

Perceived benefits of farm pond:

- Collects excess runoff during rainy periods and improved drainage.

- Stored water can be utilized for supplemental irrigation to crops during critical growth stages.
- Conserves soil and moisture.
- Useful for cattle's for drinking water during drought situations.
- Can be used for facilitating spraying of pesticides

5. Small Ruminants:

Maximum number of beneficiaries in the village are in the category of small ruminants which counts to 08 beneficiaries in the village out of total 20 beneficiaries. Out of total population of 967 about 57 people are landless in this village. The landless people have to work as labourer in village and in city for earning and livelihood. While discussion on issues of earning landless peoples showed interest in rearing of goats and urged to initiate this activity which is restricted in present situation. This component of goat rearing is found to be very useful for the genuine landless labourers and serving as a main source of income for them.

6.Subsidy on godowns:

One beneficiaries have availed the benefit of storage godowns in Sangvi Mohadi village as reported by cluster assistant. The beneficiary is "*Shri Hari Shetkari Samuh Bachat Gat*". This group was established during the year 2019. Godown of 32 x 40 ft with storage capacity of 200 tonnes is constructed through PoCRA. The project cost is Rs.16 lakhs and subsidy will be received under PoCRA is 60% of the project cost as reported by the founder member of the farmer group. Subsidy is yet to be received and its in process as stated by cluster assistant. Storage facilities are one of the most important issue faced by the farmers. It was observed that most of farmers are not having the storage facility at village level and they are forced to store their produce at their home itself. Due to lack of storage facilities small and marginal farmers are forced to sell their produce to local traders immediate after harvest and the farmers are unable to fetch higher prices if there is price hike in future for their produce. Some of the large farmers having large land holdings and joint families who are able to invest requested to have the godown subsidy under the individual beneficiary category.



Case Study 2: Village Naya Andura, Ta-Akola, Dist-Akola

The field visit to Naya Andura, district Akola was conducted on 12th September, 2023 accompanied by Agriculture Supervisor, Agriculture Assistant, Krushi Tai and Cluster Assistant along with experts from NABCONS.

According to Census 2011 information the location code or village code of NayaAndura village is 529893. NayaAndura village is located in Balapur tehsil of Akola district in Maharashtra, India. It is situated 31km away from sub-district headquarter Balapur (*Tehsildar* office) and 32km away from district headquarter Akola. As per 2009 stats, Naya Andura is the gram panchayat of Naya Andura village.

The total geographical area of village is 481.91 hectares. About 60.0 ha is under irrigation as stated by the cluster assistant. Naya Andura has a total population of 1,470 peoples, out of which male population is 757 while female population is 713. Literacy rate of Naya Andura village is 74.97% out of which 78.34% males and 71.39% females are literate. There are about 355 houses in Naya Andura village. Balapur is nearest town to Naya Andura for all major economic activities, which is approximately 31km away.

As per Maharashtra Agricultural Census on Taluka wise agricultural data of crop cutting experiments from 2016-17 to 2020-21 (www.mahaagric.gov.in), the productivity of major field crops on an average of five years data in Akola taluka is 1084.32 kg/ha soybean, 1111.9 kg/ha cotton, 1283.96 kg/ha pigeonpea, 395.52 kg/ha green gram, 378.5 kg/ha black gram, 901.08 kg/ha sorghum. These crops were grown under rainfed situation during *Kharif* season.



Status of applications in village Naya andura:

- 1) Total Registrations: 263
- 2) Total applications: 129
- 3) Pre sanctions: 64
- 3) Direct Benefit Transfers: 20

Agricultural activities implemented in village Naya Andura:

The following activities under the PoCRA projects have been implemented in this village:

- 1) Sprinkler irrigation: 12
- 2) Drip: 01
- 3) Farm Mechanization: 02
- 4) Host farmer: 03
- 5) Horticulture Plantation: 01
- 6) Water Pump: 01

Cropping Pattern:

During *Kharif* season approximately 50% of the area in the village is found to be under Cotton (BT cotton hybrids) cultivation whereas about 30% of area is under soybean cultivation. Pigeon pea is the third largest crop grown in village intercropped with Soybean in row proportion of Soybean+ Pigeon pea (6:1)/(5:1) occupying about 10% of area whereas remaining 10% area is found to be under green gram, black gram, sorghum and vegetables in minor proportions. The Soybean crop of this area is in flowering to pod development stage, cotton crop is in flowering stage and pigeon pea crop is in vegetative stage of growing. As per the version of farmers it was observed that average yield of cotton in village is about 4-

8qt/acre, soybean (4-6 qt/acre), pigeon pea is about 4-5qt/acre and Chickpea yields are around 6-7qt/acre. The most widely adopted cultivars for cotton are Ajeet-155 and Ajeet-5 whereas in soybean are Phule Sangam, PDKV Amba and Ruchi. In pigeon pea the varieties adopted are Charu and Pinkoo and for Chickpea JAKI-9218, Vijay and Digvijay are most adopted cultivars. As regards the *Rabi* season, Chickpea, Wheat and *Rabi* Sorghum are the major crops cultivated in village. Soybean followed by Chickpea cropping sequence is adopted in the village on large scale and most remunerative cropping system as mentioned by the farmers.

Soil type and fertility status: The village soils are mostly black cotton soils falling under *vertisols* which are medium to deep in depth. The farmers of this village Sangvi Mohadi have received soil health cards from Department of Agriculture, KVK's and Dr. PDKV, Akola Agriculture University as narrated by the Agriculture assistant. The black cotton soils are low in available nitrogen, medium to high in available phosphorus and high in available potassium. As regards the micro nutrients soils are found deficient in Sulphur, Zinc, Boron, Iron, Manganese and Copper. Being soybean is the major crop grown in the area farmers are extensively using chemical fertilizers like DAP, SSP and other mix fertilizers like 19:19:19 mix water soluble fertilizer for foliar spray during peak flowering to meet out the nutrient demands.

Management of soil fertility in saline tract: Farmers reported that the soils are saline due to which crops grow stunted and poor drainage was the issue of concern for them. The major constraint reported is inability to apply heavy irrigations which makes these soils ill drained and accumulation of salts on upper layer of soil. As discussed the farmers reported they are using the FYM after every 2-3 years for maintaining soil fertility status. Availability of FYM is the issue of concern as it is not easily available nearby. Farmers reported growing of leguminous crops like soybean, green gram, black gram, red gram during *Kharif* season and chick pea in *Rabi* season in cropping system. It was found that farmers are aware about using the bio-fertilizers like Rhizobium culture in case of leguminous crops to enrich atmospheric nitrogen fixation capacity in soil which was suggested by the officials of Agriculture Department during. Application of micronutrients in recommended dose can substantially increase the crop productivity. Natural resource management activities enlisted below needs promoted among the farmers to overcome the issue of salinity:

- Application of gypsum 2.5t/ha as an amended with application of FYM .
- In-situ moisture conservation practices such before commencement of rains such as square basins 20 x 20 m, opening of furrows across the slope, opening of contour furrows should be promoted.
- Sub surface tillage with the help of sub-soiler to increase the permeability of soil and to reduce surface runoff and losses of soil nutrients.

- Opening of alternate contour furrows after 2 or 3 rows of crops should be opened after 30 days of sowing to enhance crop productivity and enhanced rain water.
- Contour cultivation with opening of ridges and furrows after 30 days of sowing to enhance crop productivity and enhanced rain water.
- Cultivation of crops with broad bed furrows for in-situ moisture conservation and higher productivity in rainfed areas in saline tract.
- Water conservation ditches upto 1.5% slope cross section (1.60 m²) in deep black soils across the slope or on contour 75 to 100 m HI for improved growth and yield for dryland fruit trees and intercrop in rainfed conditions.
- Adoption of farm pond technologies and use of protective irrigation from harvested rain water and natural resource management activities like widening and deepening of drains on communal basis.

Implementation of Micro-irrigation:

1. Sprinkler irrigation

This activity has been found to be implemented in village Naya Andura with total 12 beneficiaries. 03 beneficiaries among 12 has received the benefit of mini sprinklers and received the subsidy of Rs. 101088/-. Sprinklers are used for providing the protective irrigation during the prolonged dry spells during *Kharif* and supplemental irrigation to *Rabi* crop during the critical growth stages. Major source of irrigation is the dug wells and bore wells. Beneficiaries stated that due to adoption of sprinkler irrigation there is increase in yield of about 25-45% in *Kharif* crops due to availability of protective irrigation applied during the dry spell. Cropping intensity is increased by 200% because of availability of irrigation resources available through project and cultivation of second crop in *Rabi* season. The water saving through this system occurs to the extent of 16 to 70 % and increase in yield by 3 to 57 % over traditional method of surface irrigation in different agro-climatic situation in India (Indian National Commission on Irrigation and Drainage Report 1998.)



2. Subsidy on farm Machinery:

In Naya Andura village the farmer named Shri. Sahebaro Mahokar received subsidy against the purchase of Hydraulic Plough through PoCRA project. Farmers stated that he is using it for land preparation for his own farm and also provide the implement on rental basis to the farmers of the village. Hydraulic plough is utilized for ploughing of land before sowing. Generally the farmers used to deep plough their lands once in three years as reported by the farmer. Also, the timely conduction of cultural operation in field resulted into significantly higher productivity and hydraulic plough is one the most important farm machinery for land preparation. The cost of the hydraulic plough is Rs. 75000/- and subsidy received is Rs. 35000/-



3. Plantation of Horticulture crop:

In Naya Andura village, only one farmer availed the benefit of horticulture plantation who planted the seedlings of *kagzi lime* and plant population is 277 plants in 1.0 ha area with spacing of 6m x 6m. Survival of the seedlings is very good with 100% plants survived. The plantation was equipped with drip irrigation. The name of beneficiary is Shri. Manohar Dahake who has received the first instalment of his subsidy of Rs. 37599/- as mentioned by him and total estimated cost of cultivation for plantation is around 95000/-. Major constraint under low adoption of horticulture plantation is limited irrigation sources and high initial investment as stated by farmers during discussion. The farmer has received trainings through Department of Agriculture reported the cluster assistant. The added advantage of establishing the horticulture plantation is that during initial years of plantation establishment farmers can cultivate the intercrop with the main crop to maintain the year round income. The established

horticulture plantation is able to provide sustainable returns all the year round which is very effective measure to cope up with climate vulnerability and hence needs to be promoted vigorously.



4. Drip irrigation

The drip irrigation activity is adopted by only one farmer who availed the benefit through PoCRA which creates a large scope for scaling up this activity in this area as there is lack of irrigation resources and area is mostly drought prone. The beneficiaries named Mrs.Varsha Rajput applied drip irrigation to the cotton crop during *Kharif* season. The variety used is Ajeet-155 and Rashi-659 with the spacing of 4 x 1.5 ft. Farmers received technical guidance from Agriculture Assistant and Cluster assistant for technical know how about the installation and drawing of estimates of drip. Further, farmers are expecting to harvest yield of 12-15 qt/acre of yield which was only 5-6 qt/acre before utilization of drip irrigation systems. The yield potential in cotton crop is doubled with significant water saving. Farmers are expecting higher benefit cost ratio which is attributed with the higher yields due to installation of drip.

Comments and Suggestions from Agriculture Economics Expert:

S No	Report Section	Observations	Recommendations
1	Profile/General Discussions with Farmers/HHs	Farmers had high awareness about the project, 17% farmers had received support under the project for various interventions like sprinkler /drip sets, water pump, tractor with BBF, pipes, farm forestry and horticulture plantations.	Farmers who were late in awareness about PoCRA expressed their desire to avail assets like water pumps, pipelines and micro irrigation in their farms and requested for the continuation of the programme.

2	Land Holding and Land Use Pattern Cropping Pattern	Average land holding was 1.8 acres. 80 % of the kharif area was under cotton with red gram intercropping and 20 % under soybean. <i>Rabi</i> crop was cultivated in 20-50 per cent of the NSA mostly gram. There was sporadic cultivation of wheat, onion, water melon, turmeric etc. in few pockets.	There is need to create more awareness on scientific crop planning to include short duration crops in first crop, early second crop and a possibility of 3rd crop on conserved water. Thus, climate resilient agriculture could result increased cropping intensity.
3	Status of Water Resources Management	Open well with Electric motor was popular source of water with pipelines carrying water to different parts of the field.	Efforts needed for increasing crop intensity through water conservation and crop planning.
4	Access to Agriculture Technology/Services Farmers' Field School	Information on PoCRA, better seeds, spray mixing etc., accessible through FFS demonstration plots, FFS facilitator and Krushi Tai.	Intensive extension support and farmer education needed on climate resilient agriculture. Village wise campaigns could be organized on rain water harvesting and conservation, organic matter and soil health, use of improved short duration seeds, inter/mixed cropping, double/triple cropping.
5	Soil Health/ Kharpan Region/Saline Affected Area	Among the villages covered, Rajna Purna village in Chandur Bazar Taluk of Amravati district was reportedly salt affected. However, farmers expressed that salty area is in few pockets, and generally yield of crops are better. However, the VCRMC has recommended 7 community farm ponds of size 30mx30mx3m size for surface water harvesting which will further wash away the salt.	Gypsum application in the salt affected villages need to be promoted.
6	Access to Market/ value chain	Farm produce need to be transported to Taluk level market at distances ranging 7-10 km.	Formation of FPOs as envisaged in the project need to be immediately taken up as potential

			for formation of viable FPOs existing.
7	Awareness about PoCRA Project Activities/Micro-planning	Awareness about PoCRA activities were high and villages like Rajna Purna had planned several community level structures like farm ponds and graded bunding.	It is recommended that village level assessment of community and individual treatments to be covered may be notified and implemented through the VCMRCs.
8	Challenges faced for Accessing Activities	Market price of assets is 10-20% more than the assumption in the scheme. There was demand for Jeevamrut units but farmers expressed difficulty availing such units for want of GST Bill.	Revision of unit costs of the scheme works/assets across districts recommended.
9	Support from PoCRA Functionaries for CM-VII	Adequate. However, work load of field level functionaries (CAs and AAs) reported to be high which results in sanction delays due to absence of exclusive staff for PoCRA and vacancies existing in the field.	Vacancies at ground level may be filled and exclusive staff may be provided in clusters with high allocations.
10	Main Activity applied under PoCRA	Sprinkler/drip sets, pipes, water pump, vermicompost unit, horticulture (lime, orange, custard apple, farm forestry (bamboo)	There is high demand for water pump, pipes and farm mechanization which may be prioritized
11	Impact of Activities on 1. Yield 2. Irrigation 3. Income 4. Soil health 5. Any other	An increase of 30% in yield of all crops were reported with increase in income almost double in few cases.	The BBF seed drill had a saving of Rs.1500 per acre of soybean on account of labour and less fertiliser used. On an average, the yield was increased by 2 quintals per acre (Rs.16,000). Jeevamrut unit had a saving of fertilisers of Rs.1250 per ha.
12	Awareness about Climate Change	Awareness about climate change is getting percolated at field level. However, farmers expressed that their important problem is wild animals attack on crops.	BBF technology in soybean, Sprinkler for protective and undulating corners irrigation for cotton, <i>jeevamrut</i> unit are found to have potential for higher incremental income for farmers and need to popularized.

			Campaigns to promote dryland horticulture in the scheme areas recommended.
13	Awareness on Environmental Aspects	Inadequate.	FFS need special focus and monitoring.
14	Discussions with SHGs	SHGs were existing in the villages but had not availed assistance under PoCRA.	CHCs need to be promoted on account of its labour saving, timely completion of sowing/harvest in peak labour short seasons and incremental effect on yield. New SHGs/JLGs may be promoted wherever there are no existing groups or inactive groups.
15	Discussions with VCRM/ TAO/Project officials	Naya Andura VCRM had not received maintenance assistance under PoCRA. No furniture was bought, no payment made to Krushi Tai.	Creating awareness about VCRM need focus. There is a need to converge various government schemes in PoCRA villages.
16	Discussions with FPCs* (Separate sheet may be added as per format shared)	There was no FPO in the villages	New FPCs are to be promoted under PoCRA villages as there is already a forum like VCRM which can anchor group formation and registration.
17	Discussion with Women Farmers/Gender Aspects	7 women members out of 13 in all the VCRM. Payment is received by Krushi Tai in all VRMCs except Naya Andura.	Women farmer SHGs need to be promoted and supported.

18	Farmer Field School Discussions	FFS were popular in all the PoCRA villages. One host farmer and 30 guest farmers were attending the classes. Yield level of host farmer had increased by 50%.	The number of sessions prescribed for one crop season need moderation depending upon the critical stages of the crop growth and pest/insect attack.
19	Discussions on Sanction/Status/DBT Application	DBT ranged from 20 each in Naya Andura and Sanghvi Mohadi to 63 in Brahmanavada Govindpur and 108 in Rajna Purna.	Many DBT are pending for disbursement (12 in Brahmanavada Govindpur)
20	Feedback on the PoCRA project from Farmers	Although aware of PoCRA project and its subsidies, farmers in the three districts were concerned about wild animal damage to crops.	Convergence of various government schemes from forest department, agricultural insurance, etc. in PoCRA villages will boost the impact on climate resilient agriculture.
21	Impact observed from baseline to MTE post discussions	Higher level of awareness and more number farmers who had received benefit under PoCRA	Popularity of the project among the villages and farmers demand continuation of the project. Majority of the farmers who were late in making application were desirous of making climate resilient technology investments in their farms.
22	Any Other Observation	Progress of disbursement under various components can be analysed only if component wise/ district wise targets are indicated against disbursement. Physical progress is reported in “numbers’ under all the components from sample districts.	Physical progress should be reported in acreage/area covered for components like farm mechanisation, FFS host farmer demonstrations, improved seed, compost/gypsum application, drip, sprinkler, etc.

Case Study 3: Village Bhilkhede, District Jalgaon

Bhilkhede Village was visited on 11th September, 2023 in the afternoon with Cluster Assistant, Agricultural Assistant, Agriculture Supervisor, Village *Sarpanch* and farmers and NABCONS Expert team. The detailed observations are appended below:

S. No	Report Section	Observations	Recommendations
1.	Profile/General Discussions with Farmers/HHs	<p>There are 336 households in the Bhilkhede village. Total population of the village is 1432. Number of males is 744 No and number of females is 688 No. Literacy rate of the village is 79.64%. Male Literacy rate is 88.15% and Female literacy rate is 70.59%. Total geographical area of the village is 628 hectares. There are 21 scheduled cast and 367 scheduled tribes. Total workers are 910, out of which 460 No are males and 450 Females. Out of total workers, 726 are main workers and 184 are marginal workers. There are 334 of farmers in this village.</p> <p>362 No of persons are working as farm labourers in this and adjoining villages.</p> <p>Bhilkhede village is located 10 km from the Dharangaon head quarters and 40 km from the District Headquarters Jalgaon.</p>	
2.	Land Holding and Land Use Pattern Cropping Pattern	<p>Majority of the farmers are having land less than 5 acres.</p> <p>Cotton, Soybean, Maize and <i>Tur</i> are the major crops.</p>	<p>Majority of the farmers are sowing crops. They need to be educated to grow about vegetables and horticulture. More area can be brought under lime/ citrus, custard apple and banana using drip irrigation.</p>
3.	Status of Water Resources Management	<p>Ground Water is available at about 50-60 feet depth. However sweet water is available at 70-80 feet depth. Most of the farmers are having dugwells in their fields Water gets recharged in the wells during rainy season and many farmers having wells in their fields are able to sow rabi crop.</p>	<p>Farmers in this village are using drip irrigation and are able to save water. However, they have to be persuaded to provide farm ponds for storing rainwater which will be available to them for irrigation.</p>

4.	Access to Agriculture Technology/Services Farmers' Field School	Farmers in this village are aware about new technology. They use farm machinery for agriculture. They hire the tractors, threshers and other farm machinery from CHC. There is a SHG having CHC for the farm machinery. There are more than 50 members of the CHC. This CHC has Tractors, Thresher, BBF, Rotavator etc. and they charge the rent per quintal. Some Farmers are aware of host farmers field school and attended the training. But majority of the farmers have not attended the trainings regularly.	VCRMC and Krushi Tai should persuade the farmers to attend the FFS trainings.
5.	Soil Health/ <i>Kharpan</i> Region/Saline Affected Area	Soil in this area is Medium soil. Soil is fertile. This is non <i>Kharpan</i> area. Soil testing have not been carried out in general.	Soil testing of the farms shall be carried out regularly so that farmers can use optimum quantity of fertilizers.
6.	Access to Market/ value chain	Nearby Market is at Dharangaon which is about 10 km away from the village.	
7.	Awareness about PoCRA Project Activities/Micro-planning	Farmers now are aware about PoCRA Project Activities. In this village there are 151 disbursements.	
8.	Challenges faced for Accessing Activities	Project officers, staff and VCRMC must coordinate to provide the project benefits to the farmers. Had they persuaded the farmers from the beginning more farmers could have got the benefits. Farmers were requesting to extend the time of the project.	

9.	Main Activity applied under PoCRA	<p>Main activity applied for is Drip Irrigation and pipes. Farmers are using drip irrigation for cotton and Maize crops. Other activities are listed below:</p> <p>Total Applications – 591 No No of Pre Sanctions - 212 No Total disbursements – 151 No No of rejections - 320 No Drip Irrigation sets -- 42 No Farm Mechanization - 1 No Host Farmers - 3 No Pipes - 63 No Sprinkler - 1 No Saline & sodic land/ (farm ponds/ sprinkler/ Water pumps / FFS) - 8 No Water pumps - 29 No Small remuneration - 4 No</p> <p>An amount of Rs 46.96 Lakh was disbursed to the farmers.</p>	<p>The reason for high number of rejections was given that earlier farmers did not apply as they didn't know about the project benefits.</p> <p>After knowing from the fellow farmers, they applied after Jan 2023. It was informed that new applications were not taken in or after Jan 2023.</p> <p>The matter may be brought to the notice of higher authorities to extend the time period of the project so that left out farmers may also take the benefit of the Project.</p>
10.	Impact of Activities on 1. Yield 2. Irrigation 3. Income 4. Soil health 5. Any other	Due to adoption of micro irrigation, use of good quality seeds, yield of cotton crop have increased. Hence the income of the farmers also increased. Regarding soil health, there is no testing of soil health.	With the adoption of project activities, the yield and income of the farmers have increased. With the use of micro irrigation, there is saving in quantity of water. Regarding soil health, regular testing of soil shall be carried out.
11.	Awareness about Climate Change	Farmers were aware about climate change, change in rain pattern and increase in temperature. Keeping this in view, they are adopting micro irrigation, aware about having farm ponds and are using resilient variety of seeds.	

12.	Awareness on Environmental Aspects	During the visit, it was observed that farmers in Jalgaon district have adopted tree plantation along the roads, along the drains, along the field boundaries and field paths. They need to be educated about not to burn the crop residue instead use it for bio-fertilisers or other usages.	Farmers should avoid using Pesticides and fertilizers. They should be encouraged to use Bio-fertilizers and Vermi compost. They should be trained to convert agricultural waste and animal dung into compost.
13.	Discussions with VCRMC/ TAO/Project officials	VCRMC has 13 members out of which 4 are females. VCRMC is conducting regular meetings. Krushi Tai received salary for 7 months only and is not getting the salary from the last year. The Committee members have provided the information about the benefits of the project to the farmers and persuaded them to get the maximum benefits.	Krushi Tai should be paid the salary regularly. VCRMC should have provided the information of the project benefits to all farmers. Earlier only the large farmers were informed about the project and they applied and received the benefits. Smaller farmers also started applying but their applications were not considered as they applied after Jan 2023. The Project authorities may be requested to extend the project time so that more farmers may get the benefits.
14.	Discussion with Women Farmers/Gender Aspects	It was informed that that out of 151 beneficiaries 98 are women. Women farmers are doing well. However, in the meeting women farmers did not participate.	Women farmers should be persuaded to attend the meetings and trainings.
15.	Farmer Field School Discussions	Trainings were given at Host FFS. However, it was observed that farmers are not attending the training sessions regularly.	Regular training to the farmers should be given in FFS.
16.	Discussions on Sanction/Status/DBT Application	a) It was informed that most of the farmers have received their DBT within one to three months. b) Farmers who have applied after Jan, 2023 have not received any benefit as	All farmers were not aware of the project in the Covid period and could not apply and avail the benefits. Further,

		no sanction is being carried out. In this village 320 applications were rejected as most of these were received after Jan 2023. c) Farmers are ready to apply for other benefits.	applications are not being considered after Jan, 2023. As such, the Govt may be approached to extend the project time to provide project benefits to the remaining farmers.
17.	Feedback on the PoCRA project from Farmers	Farmers admitted that the PoCRA project is beneficial to their village. In case time for PoCRA Project, extended, they are ready to apply for more benefits.	
18.	Impact observed from baseline to MTE post discussions	Farmers who have been directly benefitted were satisfied.	

Case Study 4: Village Harsoda Bhilkhede, District Buldhana

Harsoda Village was visited on 12th September, .2023 in the forenoon along with NABCONS Experts and field team, Cluster Assistant, Agricultural Assistant, Agriculture Supervisor, Village *Sarpanch* and farmers were present. The detailed observations are appended below.

S No	Report Section	Observations	Recommendations
1.	Profile/General Discussions with Farmers/HHs	There are 489 households in the Harssoda village. Total population of the village is 2157. Number of males is 1135 No and number of females is 1022 No. Literacy rate of the village is 76.00%. Male Literacy rate is 85.06% and Female literacy rate is 66.29%. Total geographical area of the village is 1102.02 hectares. Cultivable area is 1023.37 hectares for <i>Kharif</i> crop. Area under <i>Rabi</i> crop is 322 hectares. Irrigated area is 987 hectares. There are 304 No scheduled Cast and 452 No scheduled tribes. Total workers are 1211, out of which 686 No are males and 525 No Females. Out of total	

		workers, 1145 No are main workers and 66 No are marginal workers. There are 387 No of farmers in this village. 595 No persons were working as farm labourers in this and adjoining villages. Harsoda was located about 10 km from Malkapur and 51 km towards north from the District Headquarters Buldana. Nandura, Burhanpur, Raver and Shegaon are other nearby towns.	
2.	Land Holding and Land Use Pattern Cropping Pattern	Majority of the farmers are having land less than 5 acres. Cotton, Soyabean, Toor, Maize, are the major crops. Gram, Wheat, Jawar are <i>Rabi</i> crops. Lemon and custard apple are grown in small areas.	Majority of the farmers are sowing crops. They need to be educated to grow vegetables and horticulture. More area can be brought under lime/ citrus and custard apple.
3.	Status of Water Resources Management	Ground Water is available at about 80 feet depth. Water is saline. Poorna river flows near the village. Backwaters of Hatnur dam reaches this village. Farmers lift the waters from the reservoir for irrigation. The backwater also recharges the dugwells near the local river and is used for irrigation. Drinking water is supplied to the houses from water supply scheme. The water is lifted from backwaters. Treated RO water is supplied for drinking. Water is available to farmers in <i>Kharif</i> crop also. Farmers informed that there is less rainfall in the region during this year.	Farmers in this village are using drip and sprinkler irrigation and are able to save water. However, they have to be persuaded to provide farm ponds for storing rainwater which will be available to them for irrigation.
4.	Access to Agriculture Technology/Services Farmers' Field School	Farmers in this village are aware about new technology. They use farm machinery for agriculture. In case they don't own, they hire the tractors, threshers and other farm machinery.	VCRMC and Krushi Tai should persuade the farmers to attend the FFS trainings.

		Majority of the farmers have not attended the trainings regularly.	
5.	Soil Health/ Kharpan Region/Saline Affected Area	Soil in this area is saline soil. This is a <i>kharpan</i> area. Ground water is saline. Soil testing have not been carried out in general. Farmers were informed about adding of gypsum salt or fly ash in the <i>kharpan</i> area to treat the soil.	Soil testing of the farms shall be carried out so that farmers can use optimum quantity of fertilizers. Farmers should also be persuaded to add fly ash for better soil treatment.
6.	Access to Market/ value chain	Village is connected by metaled road. Nearby Market is Malkapur which is about 10 km away from the village.	
7.	Awareness about PoCRA Project Activities/Micro-planning	Farmers now are aware about PoCRA Project Activities. There are 102 beneficiaries in this village. About 368 applications were rejected as these farmers were already having drip or sprinkler irrigation. There were no Notice Boards of the PoCRA project in the village, No complaint box and No VCRMC Board in the panchayat office.	
8.	Challenges faced for Accessing Activities	Project officers, staff and VCRMC have coordinated to provide the project benefits to the farmers. However, some small farmers were requesting to increase the time of project so that they too can get the activities.	Project authorities may consider for extension of the project time so that small farmers may also get the benefits.
9.	Main Activity applied under PoCRA	Main activity applied for is Drip Irrigation and Sprinkler Irrigation. Farmers are using drip irrigation for cotton and Maize crops. Other activities are listed below: Total Applications – 571 No Total disbursements – 102 No	

		Drip Irrigation sets -- 39 No Farm Mechanization - 3 No Pipes - 8 No Water Pump - 3 No Horticulture - 1 No Seed Production - 17 No Sprinkler sets - 26 No Saline & Sodic lands/ (Farm ponds/ Pump/ Sprinklers/FFS) - 2 No FFS Host Farmer Assistance - 3 No Horticulture - 1 No Total disbursement to the farmers= Rs 45.37 Lakh	
10.	Impact of Activities on 1. Yield 2. Irrigation 3. Income 4. Soil health 5. Any other	Due to adoption of micro irrigation, use of good quality seeds, yield of soybean crop have increased by about 25%. With the use of micro irrigation, the water is consumed 30% lesser than normal flooding. With increased yield and good pricing their income has increased by about 25%. Regarding soil health, there is no testing of soil health.	With the adoption of project activities, the yield and income of the farmers has increased. With the use of micro irrigation, there is saving in quantity of water. Regarding soil health, regular testing of soil shall be carried out.
11.	Awareness about Climate Change	Farmers were aware about climate change, change in rain pattern and increase in temperature. Keeping this in view, they are adopting micro irrigation, aware about having farm ponds and are using resilient variety of seeds.	

12.	Awareness on Environmental Aspects	<p>During the visit, it was observed that farmers in Buldana district have adopted tree plantation along the roads, along the drains, along the field boundaries and field paths. However, on query about residue of cotton crop most of the farmers were found to be burning the residue. They need to be educated about not to burn the crop residue instead use it for bio-fertilisers or other usages.</p> <p>They were aware of the harmful effects of pesticides and fertilizers, but were using them without proper knowledge. Some farmers have adopted solar power for running of pumps.</p>	Farmers should avoid using Pesticides and fertilizers. They should be encouraged to use Bio-fertilizers and Vermi compost. They should be trained to convert agricultural waste and animal dung into compost.
13.	Discussions with VCRMC/TAO/Project officials	<p>VCRMC is conducting regular meetings. The Committee members have provided the information about the benefits of the project to the farmers and persuaded them to get the benefits.</p> <p>It was informed that <i>Krushai Tai</i> has not received her salary since Jan 2022.</p>	<p>VCRMC and <i>Krushai Tai</i> should intimate the benefits of the Project to the farmers and persuade them to receive maximum benefits of the Project.</p> <p><i>Krushai Tai</i> should be paid her salary timely.</p>
14.	Farmer Field School Discussions	<p>Trainings for Soybean were given at FFS Host farmers field. However, it was observed that farmers are not attending the training sessions regularly.</p>	<p>Regular training to the farmers should be given in FFS.</p>
15.	Discussions on Sanction/Status/DBT Application	<p>d) It was informed that most of the farmers have received their DBT within one to three months.</p> <p>e) Farmers who have applied after Jan, 2023 have not received any benefit as no sanction is being carried out.</p> <p>f) Farmers were ready to apply for other benefits.</p>	<p>All farmers were not aware of the project in the Covid period and could not apply and avail the benefits. Further, applications are not being considered after Jan, 2023. As such, the Govt may be approached to extend the project time to provide project benefits to the remaining farmers.</p>

16.	Feedback on the PoCRA project from Farmers	Farmers admitted that the PoCRA project is beneficial to their village. In case time for PoCRA Project, extended, they are ready to apply for more benefits.	
17.	Impact observed from baseline to MTE post discussions	Farmers who have been directly benefitted were satisfied. Their income has increased due to increased yield and better prices.	

Case Study 5: Village Shemba Bk, District Buldhana

Shemba Bk Village was visited on 12th September, 2023 in the afternoon along with NABCONS Experts and field team, Cluster Assistant, Agricultural Assistant, Agriculture Supervisor, Village *Sarpanch* and farmers were also present. The detailed observations are appended below.

S No	Report Section	Observations	Recommendations
1.	Profile/General Discussions with Farmers/HHs	<p>There are 579 No of houses in the Shemba Bk village. Total population of the village was 2691. Number of males was 1397 and number of females was 1294 No. Literacy rate of the village is 87.27%. Male Literacy rate is 93.79% and Female literacy rate is 80.38%. There were 718 scheduled castes and 23 scheduled tribes. Total workers were 1384, out of which 766 were males and 618 were Females. Out of total workers, 1287 were main workers and 97 were marginal workers. There were 501 farmers in the village. About 665 persons were working as farm labourers in this and adjoining villages.</p> <p>Total geographical area of the village was 373.82 hectares. Cultivable area was 260.59 hectares for <i>Kharif</i> crop.</p>	

		Irrigated area was 225.87 hectares. Area under <i>Rabi</i> crop was 47 hectares. Shemba Bk is located 24 km towards north from the District Headquarters Buldana and 21 km from Nandura. Malkapur, Nandura, Shegaon and Bhusawal are nearby towns.	
2.	Land Holding and Land Use Pattern Cropping Pattern	Majority of the farmers are having land less than 5 acres. Cotton, Soybean, Jowar, Maize, <i>Tur</i> , grams and wheat are the major crops. Lemons are planted in small areas. Vegetables like brinjal and chilies are also grown in small areas.	Majority of the farmers are sowing crops. They need to be educated to grow vegetables and horticulture crops. More area can be brought under lime, custard apple, banana and vegetables using drip irrigation.
3.	Status of Water Resources Management	Ground Water is available at 40- 60 feet depth in some areas. The TDS in ground water is high. Drinking water is supplied from Nalganga dam and reservoir. Irrigation water is available from Bhandara at about 1 km from the village.	Farmers in this village are using drip irrigation and are able to save water. However, they have to be persuaded to provide farm ponds for storing rainwater which will be available to them for irrigation.
4.	Access to Agriculture Technology/Services Farmers' Field School	Farmers in this village are aware about new technology. They use farm machinery for agriculture. In case they don't own, they hire the tractors, threshers and other farm machinery. But majority of the farmers have not attended the trainings. <i>Krushai Tai</i> and VCRMC members too have not attended trainings.	VCRMC and <i>Krushai Tai</i> should persuade the farmers to attend the online as well as FFS trainings.
5.	Soil Health/ <i>Kharpan</i> Region/Saline Affected Area	Soil in this area is Medium soil. Soil is fertile.	Soil testing of the farms shall be carried out so that farmers can use optimum quantity of fertilizers.
6.	Access to Market/ value chain	Nearby Market is Nandura about 21 km away from the village. Malkapur is about 33 km from the village.	

7.	Awareness about PoCRA Project Activities/Micro-planning	Farmers now are aware about PoCRA Project Activities. About 86 farmers have been benefitted from the Project.	
8.	Challenges faced for Accessing Activities	Project officers, staff and VCRMC have well-coordinated to provide the project benefits to the farmers.	
9.	Main Activity applied under PoCRA	<p>Main activity applied for is Drip Irrigation and Sprinkler Irrigation sets. Farmers are using drip irrigation for cotton and Maize crops. Other activities are listed below:</p> <p>Total Applications – 376 No Pre Sanction - 96 No Total beneficiaries – 86 No Drip Irrigation sets -- 55 No Farm Mechanization - 5 No FFS Host Farmers - 2 No Pipes - 2 No Small Ruminants - 9 No Sprinkler Irrigation set- 13 No</p> <p>Total disbursed funds = Rs 57.61 Lakh. There are 10 women farmer beneficiaries and 6 scheduled tribe farmers are beneficiaries.</p> <p>An Oil Extraction Unit has been set up in the village by an SHG/ Farmer Group. Benefit of Rs 3,07,173/- was disbursed.</p>	
10.	Impact of Activities on 1. Yield 2. Irrigation 3. Income 4. Soil health	Due to adoption of micro irrigation, use of good quality seeds, yield of cotton crop and soybean have increased by 20-30%. With the use of micro irrigation, the water consumption is 30% lesser. With increased yield and good pricing their income has increased by about 25%-30%.	With the adoption of project activities, the yield and income of the farmers has increased. With the use of micro irrigation, there is saving in quantity of water. Regarding soil health,

		Regarding soil health, there is no testing of soil health.	regular testing of soil shall be carried out.
11.	Awareness about Climate Change	Farmers were aware about climate change, change in rain pattern and increase in temperature. Keeping this in view, they are adopting micro irrigation, aware about having farm ponds, using resilient variety of seeds.	
12.	Awareness on Environmental Aspects	<p>During the visit, it was observed that farmers in Buldhana district have adopted tree plantation along the roads, along the drains, along the field boundaries and field paths. However, on query about residue of cotton crop most of the farmers were found to be burning the residue. They need to be educated about not to burn the crop residue instead use it for bio-fertilisers or other usages.</p> <p>They were aware of the harmful effects of pesticides and fertilizers, but were using them without proper knowledge. Some farmers have adopted solar power for running of pumps.</p>	Farmers should avoid using Pesticides and fertilizers. They should be encouraged to use Bio-fertilizers and Vermi compost. They should be trained to convert agricultural waste and animal dung into compost.
13.	Farmer Field School Discussions	Trainings were given at Host FFS. However, it was observed that farmers are not attending the training sessions regularly.	Regular training to the farmers should be given in FFS.
14.	Discussions on Sanction/Status/DBT Application	<p>g) It was informed that most of the farmers have received their DBT within one to three months.</p> <p>h) Farmers who have applied after Jan, 2023 have not received any benefit as no sanction is being carried out.</p> <p>i) Farmers are ready to apply for other benefits.</p>	<p>All farmers were not aware of the project in the Covid period and could not apply and avail the benefits. Further, applications are not being considered after Jan, 2023.</p> <p>As such, the Govt may be approached to extend the</p>

			project time to provide project benefits to the remaining farmers.
15.	Feedback on the PoCRA project from Farmers	Farmers admitted that the PoCRA project is beneficial to their village. In case time for PoCRA Project is extended, they are ready to apply for more benefits.	
16.	Impact observed from baseline to MTE post discussions	Farmers who have been directly benefitted were satisfied.	
17.	Any Other Observation	Shemba Kranti Agro Producer Company Limited has set up an Oil Extraction Unit in the village. Groundnut oil, sunflower oil, mustard oil, etc. are extracted and sold in the market. Oil seeds are grown in this village and adjoining village. Presently the full capacity of the unit is not utilized as oil seeds are grown in less quantity. However, the company is tying up with the farmers to purchase the whole produce in case the farmers grow oil seeds in their farms.	More farmers can adopt to this practice.

Case Study 5: Village Tarkhede Kh, District Jalgaon

Tarkhede Kh Village was visited on 11.09.2023 in the afternoon alongwith NABCONS Expert and field team, Cluster Assistant, Agricultural Assistant, Agriculture Supervisor, Village *Sarpanch* and farmers. The detailed observations are appended below.

S No	Report Section	Observations	Recommendations
1.	Profile/General Discussions with Farmers/HHs	There are 589 No of houses in the Tarkhede Kh village. Total population of the village is 2858. Number of males is 1453 No and number of females is 1385 No. Literacy rate of the village is 75.97%. Male Literacy rate is	

		<p>82.34% and Female literacy rate is 68.54%. Total geographical area of the village is 956 hectares. Cultivable area is 800 hectares for <i>Kharif</i> crop. Irrigated area is 720 hectares. There are 126 No scheduled Cast and 444 No scheduled tribes. Total workers are 1306, out of which 786 No are males and 520 No Females. Out of total workers, 1299 No are main workers and 7 No are marginal workers. There are 483 No of farmers in this village out of which 135 No are women farmers.</p> <p>838 No persons are working as farm labourers in this and adjoining villages.</p> <p>Tarkhede Kh is located 57 km towards south from the District Headquarters Jalgaon and 8 km from Taluka Pachora. Soyagaon, Pachora, Parola and Chalisgram are nearby towns.</p>	
2.	<p>Land Holding and Land Use Pattern</p> <p>Cropping Pattern</p>	<p>Majority of the farmers are having land less than 5 acres.</p> <p>Cotton, Soyabean, Maize and Toor are the major crops. Vegetables are grown in appx 2% area. Lemon / Mousambi and banana are grown in small areas.</p>	<p>Majority of the farmers are sowing crops. They need to be educated to grow about vegetables and horticulture. More area can be brought under lime/ citrus, custard apple and banana using drip irrigation.</p>
3.	Status of Water Resources Management	<p>Ground Water is available at 40 feet depth in some areas. However sweet water is available at 70-80 feet depth. About 85% of the farmers are having dugwells in their fields. About 10% area is irrigated by canal water and tank water.</p> <p>Drinking water is supplied to the houses from water supply scheme about 4 km away from the village.</p> <p>Water is available to farmers in <i>Kharif</i> crop also. Sundra river flows near the village. Cement nallah bund on the rivulet has created water storage upstream. Water gets</p>	<p>Farmers in this village are using drip irrigation and are able to save water. However, they have to be persuaded to provide farm ponds for storing rainwater which will be available to them for irrigation.</p>

		<p>recharged in the nearby wells and many farmers having wells in their fields are able to sow <i>Rabi</i> crop. Ground water level has increased in the village due to <i>nallah</i> deepening and <i>nallah</i> bunding.</p> <p>Farmers informed that there is less rainfall in the during this year.</p>	
4.	Access to Agriculture Technology/Services Farmers' Field School	<p>Farmers in this village are aware about new technology. They use farm machinery for agriculture. In case they don't own, they hire the tractors, threshers and other farm machinery. There are about 50 tractors in the village. Some Farmers are aware of host farmers field school and attended the training. But majority of the farmers have not attended the trainings regularly.</p>	VCRMC and Krushi Tai should persuade the farmers to attend the FFS trainings.
5.	Soil Health/ Kharpan Region/Saline Affected Area	<p>Soil in this area is Medium soil. Soil is fertile. This is non kharpan area. Soil testing have not been carried out in general.</p>	Soil testing of the farms shall be carried out so that farmers can use optimum quantity of fertilizers.
6.	Access to Market/ value chain	Nearby Market is Pachora about 8 km away from the village.	
7.	Awareness about PoCRA Project Activities/Micro-planning	<p>Farmers now are aware about PoCRA Project Activities. Awareness can be seen from the fact that there are 483 farmers and there are 471 No disbursements in the village.</p>	
8.	Challenges faced for Accessing Activities	Project officers, staff and VCRMC have well-coordinated to provide the project benefits to the farmers.	
9.	Main Activity applied under PoCRA	<p>Main activity applied for is Drip Irrigation. Farmers are using drip irrigation for cotton and Maize crops. Other activities are listed below:</p> <p>Total Applications – 946 No</p> <p>Total disbursements – 471 No</p>	

		<p>Drip Irrigation sets -- 313 No</p> <p>Farm Mechanization - 3 No</p> <p>Horticulture - 28 No</p> <p>Seed Production - 12 No</p> <p>Pumps - 6 No</p>	
10.	Impact of Activities on 1. Yield 2. Irrigation 3. Income 4. Soil health 5. Any other	Due to adoption of micro irrigation, use of good quality seeds, yield of cotton crop have increased from 5 quintals to 7- 8 quintals per acre. With the use of micro irrigation, the water is consumed 30% lesser than normal flooding. With increased yield and good pricing their income has increased by about 25%-30%. Regarding soil health, there is no testing of soil health.	With the adoption of project activities, the yield and income of the farmers has increased. With the use of micro irrigation, there is saving in quantity of water. Regarding soil health, regular testing of soil shall be carried out.
11.	Awareness about Climate Change	Farmers were aware about climate change, change in rain pattern and increase in temperature. Keeping this in view, they are adopting micro irrigation, aware about having farm ponds, using resilient variety of seeds.	
12.	Awareness on Environmental Aspects	<p>During the visit, it was observed that farmers in Jalgaon district have adopted tree plantation along the roads, along the drains, along the field boundaries and field paths. However, on query about residue of cotton crop most of the farmers were found to be burning the residue. They need to be educated about not to burn the crop residue instead use it for bio-fertilisers or other usages.</p> <p>They were aware of the harmful effects of pesticides and fertilizers, but were using them without proper knowledge. Some farmers have adopted solar power for running of pumps.</p>	Farmers should avoid using Pesticides and fertilizers. They should be encouraged to use Bio-fertilizers and Vermi compost. They should be trained to convert agricultural waste and animal dung into compost.

13.	Discussions with VCRMC/ TAO/Project officials	<p>VCRMC is conducting regular meetings. The Committee members have provided the information about the benefits of the project to the farmers and persuaded them to get the maximum benefits.</p> <p>A meeting was held with Additional DSAO and PD (ATMA), Jalgaon and his officers on 11.09.2023. In the meeting, following points were discussed:</p> <ol style="list-style-type: none"> Mid Term Insurance of crops. Soil in the district is black cotton soil and medium soil Banana cultivation is increasing in the district. Provided financial assistance to set up small warehouses, CHC, Grain cleaning centre, etc. Financial assistance to FPC and FPO DBT to the farmers in the district for Farm Mechanization DBT to the farmers for purchase of drip irrigation sets, Sprinkler sets, farm ponds, etc. For landless farmers, assistance was granted for vermicomposting, goat keeping, etc. It was found that some beneficiaries have sold their goats. Trainings were provided at FFS. 	<p>VCRMC and Krushi Tai of other villages should learn from the experience of this village. They should intimate the benefits of the Project to the farmers and persuade them to receive maximum benefits of the Project.</p> <p>For landless workers taking benefits for goat rearing, some check should be kept so that such persons can not sell the goats for petty sum.</p>
14.	Discussion with Women Farmers/Gender Aspects	There are 135 No women farmers. As per the farmers they are doing well. However, they are not attending meetings regularly.	Women farmers should be persuaded to attend the meetings and trainings.
15.	Farmer Field School Discussions	Trainings were given at Host FFS. However, it was observed that farmers are not attending the training sessions regularly.	Regular training to the farmers should be given in FFS.

16.	Discussions on Sanction/Status/DBT Application	<p>j) It was informed that most of the farmers have received their DBT within one to three months.</p> <p>k) Farmers who have applied after Jan, 2023 have not received any benefit as no sanction is being carried out.</p> <p>l) Farmers are ready to apply for other benefits.</p>	<p>All farmers were not aware of the project in the Covid period and could not apply and avail the benefits. Further, applications are not being considered after Jan, 2023. As such, the Project authorities may be consider to extend the project time to provide project benefits to the remaining farmers.</p>
17.	Feedback on the PoCRA project from Farmers	Farmers admitted that the PoCRA project is beneficial to their village. In case time for PoCRA Project, extended, they are ready to apply for more benefits.	
18.	Impact observed from baseline to MTE post discussions	Farmers who have been directly benefitted were satisfied and farmers in the villages where NRM activities, development of farm and community ponds, deepening of <i>nallahs</i> have been carried out they have been receiving more water and are satisfied.	
19.	Any Other Observation	A Farm of Mr Abhimanyu Triambak Patil was visited. It is 0.68 Ha farm adjoining to <i>nallah</i> . There are recharging shafts on the <i>nallah</i> near the farm. There is a pond and a small house. There is a pump, drip irrigation for custard apple / custard apple, in 0.60 ha. He is expecting good returns from custard apple in the coming season. The farmer has taken pump, drip irrigation set and pond from the PoCRA project.	More farmers can adopt to horticulture by learning from the experience of Mr Patil.

8. Insights from PoCRA MIS Data

8.1. DBT MIS Data

Registrations

Registration Status

As per PMU guidelines, farmers and landless households willing to avail of benefits under the project need to first register themselves in the mobile application exclusively developed for this purpose. It is to be noted that registration does not mean the provision of services/benefits but it is the first step towards applying for any benefit under the project.

Registration of a number of beneficiaries under the PoCRA Project is given in the table below. As per the project MIS Data, the registration started in November 2018 and until 31st March 2023, a total of 5,69,470 beneficiaries have registered under the project in the Rest of Project Area (Akola, Amravati, Buldana, Jalgaon, Wardha, Washim, and Yavatmal districts). The highest number of registrations were made in the Apr 21 – Sep 21 (about 19%), followed by Oct 21 – Mar 22 (16%) and Oct 20 – Mar 21 (15%), Apr 19-Sep19(13%), Oct 19-Mar 20 (10%), Oct 22 - Mar 23(9%).

Table 24: Registrations in the Rest of Project Area Districts

Time Period	Registrations	
	Number	%
Nov 18 - Mar 19	32,163	6%
Apr 19 - Sep 19	72,942	13%
Oct 19 - Mar 20	58,997	10%
Apr 20 - Sep 20	35,625	6%
Oct 20 - Mar 21	87,479	15%
Apr 21 – Sep 21	1,07,286	19%
Oct 21 – Mar 22	92,930	16%
Apr 22- Sep 22	30,820	5%
Oct 22 - Mar 23	51,228	9%
Total	5,69,470	100%

Status of District wise total registrations is shown in the table below. As per the data, highest number of registrations were in Buldhana (24%), followed by Akola (22%), Amravati (18%) Jalgaon (18%), Yavatmal (9%) and Washim (7%) followed this. Wardha showed the least number of registrations to only 2%.

Table 25: Total Registrations

District	Akola	Amravati	Buldhana	Jalgaon	Wardha	Washim	Yavatmal	Total
Registrations (No.)	122314	96041	137904	113527	13726	37714	48244	569470
Registrations (%)	22%	18%	24%	18%	2%	7%	9%	100%

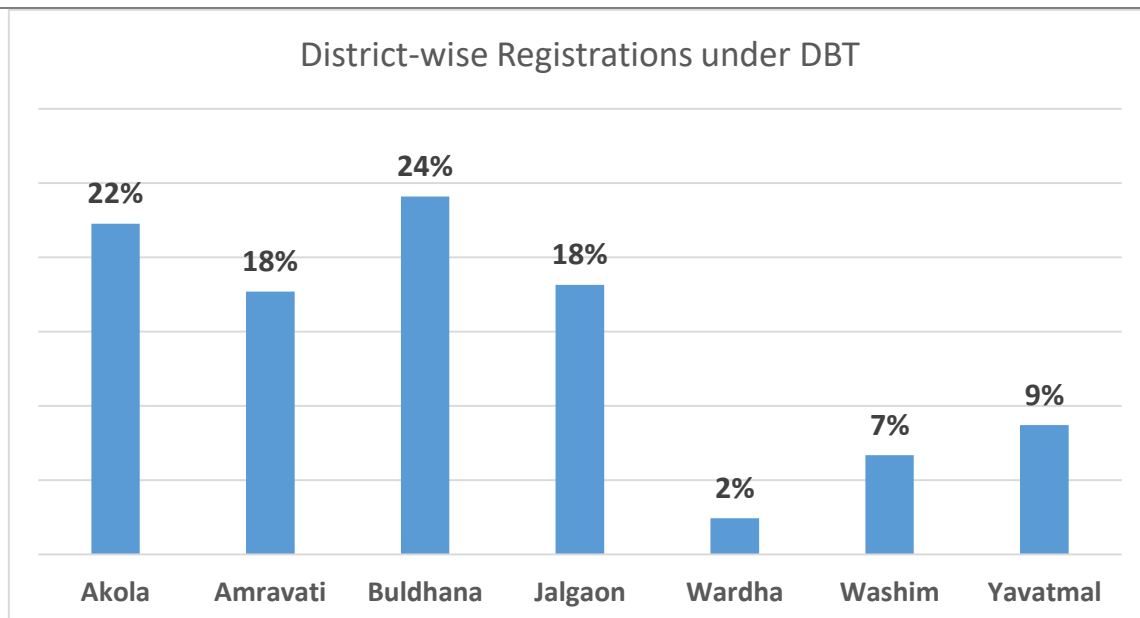


Figure 50: District-wise Registrations under DBT

Applications

Application Status

Of the total 5,69,470 individuals registered up to March 2023, as many as 4,28,098 individuals (or 75%) applied for one or more benefits until March 2023.

District-wise number of active applications submitted by registered individuals is given below in the table. As in the case of number of registrations, Jalgaon (30%) and Buldhana (24%) districts showed the highest number of applications for benefits under the project and in the other districts, it was 13% to 11% except in Wardha district where it was just 3% only.

Table 26: District wise Active Applications (till 31.03.2023)

District	Applications	Percent
Akola	54008	13%
Amravati	38983	9%
Buldhana	100698	24%
Jalgaon	128921	30%
Wardha	13724	3%
Washim	44620	10%
Yavatmal	47144	11%
Total	428098	100%

Status of application of male–female in rest of project area. The highest female application was received in Jalgaon (25%), followed by Akola (20%) and lowest application received in Wardha (14%).

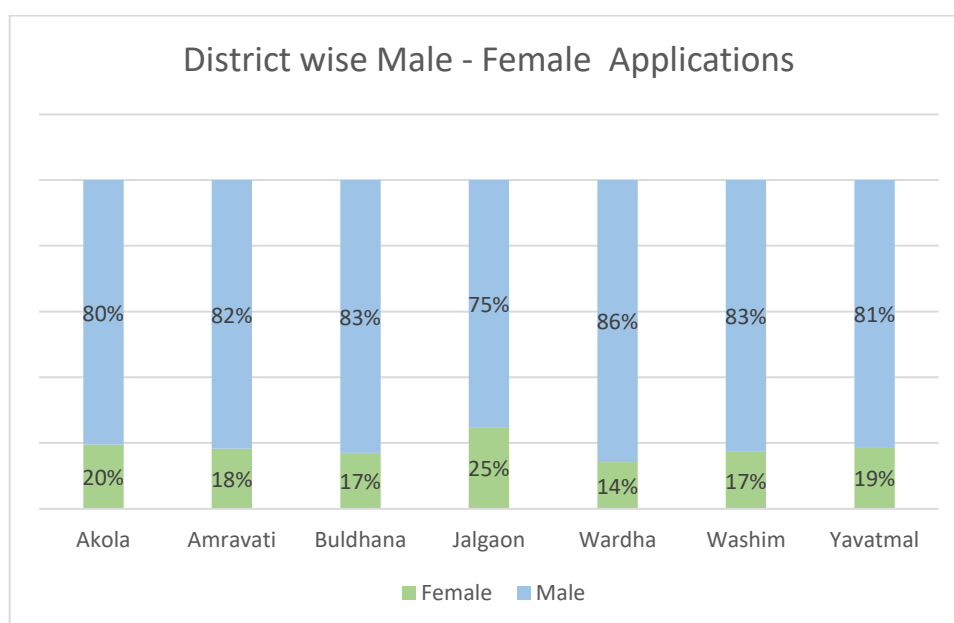


Figure 51: District wise male – female Applications

Out of total of 78860 female applications, social category-wise applications were General (93%), Schedule case (4%), Schedule tribes (3%). Similarly, total 3,49,238 male applications were General (92%), Schedule case (5%), Schedule tribes (3%).

The total male-female applications, were highest SC category (24%) in Buldhana and the highest ST category (32%) in Yavatmal.

Disbursements

Disbursement Status

Out of 4,28,098 applications, disbursements have been made to 1,68,781 applications constituting 39% of the total applications. Total amount disbursed is Rs 91663.01 Lakhs. The highest amount has been disbursed to Jalgaon (Rs. 37320 lakh) followed by Buldhana (Rs. 13041.54lakh) and lowest disbursed district was Wardha (Rs. 3640.31 lakh). The total individual disbursed beneficiaries of rest of the project area 144951 out of which 80% are male and 20% female. The proportion of disbursement of male & female beneficiaries in overall districts, was lowest in the districts of Wardha (M-2%, F-3%), Washim (M-7%, F-9%) and the highest disbursement was in Jalgaon (M-44%, F-34%) followed by Buldhana (M-18%, F-23%).

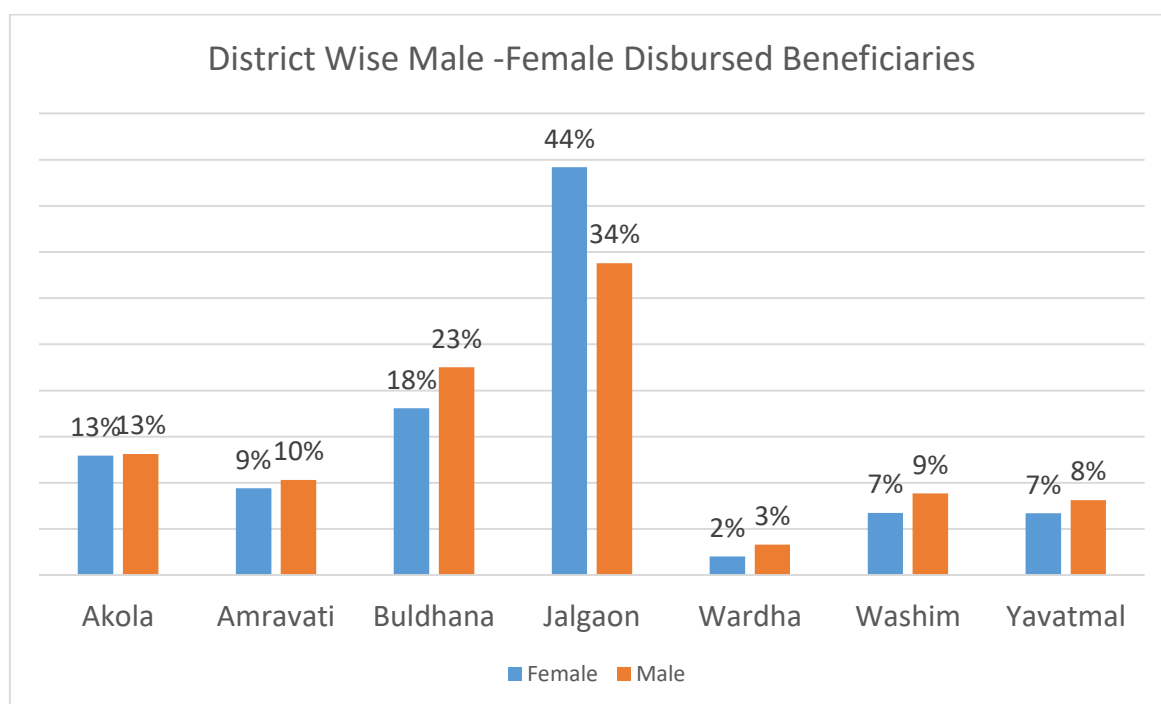


Figure 52: District wise male – female disbursed beneficiaries

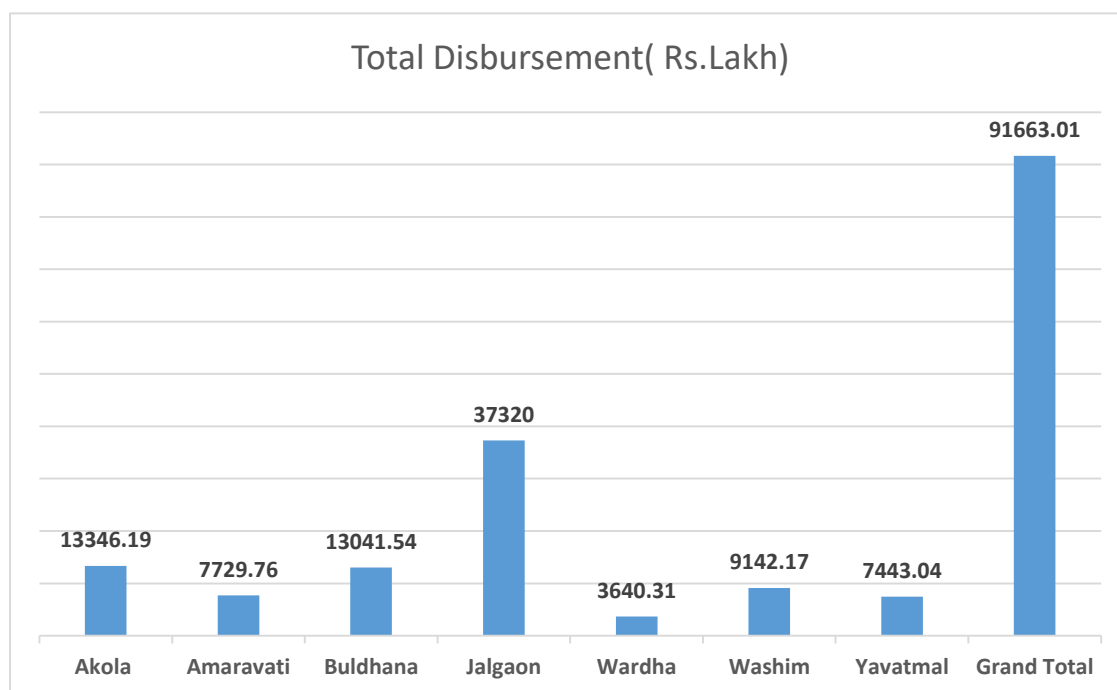


Figure 53: Total Disbursements

Activity wise disbursement status is presented in the figure below². Around 57.88% of the amount has been disbursed for Drip Irrigation (Rs. 28620.75 Lakhs), followed by Shadenet House 9.63% (Rs. 4760.24 Lakhs), Sprinkler Irrigation 9.40% (Rs. 4649.64 Lakhs), Farm mechanization 3.68% (Rs. 1821 Lakhs) and Saline & Sodic lands (Farm ponds/ Sprinklers / Water pump) 3.28% (Rs. 1619.65 Lakhs). Rest of the disbursements in activity was less than 3.20%.

² Offline application activity wise disbursement data was not available.

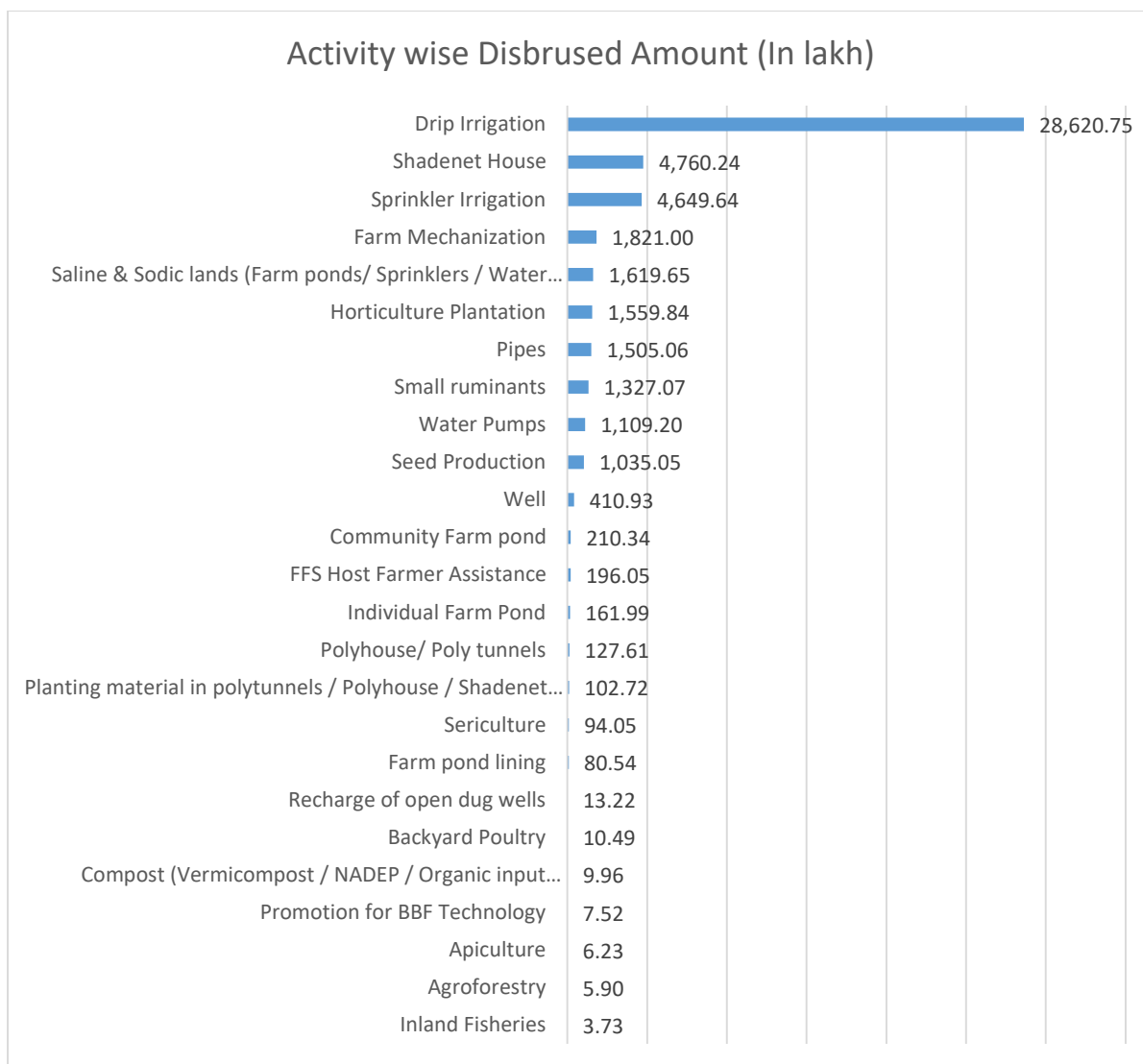


Figure 54: Activity wise Disbursement Amount

Social Category - wise Status

Out of the total applicant's disbursements, 4% were from Schedule Caste (SC) and 2% were from Schedule Tribe (ST) and the remaining 94% from other social categories. The proportion of social category beneficiaries in rest of project area, ST was highest in Yavatmal (30%) and Jalgaon (22%). SC was highest in Buldhana (26%) and Akola (22%). Similarly, other social category was highest in Jalgaon (37%), followed by Buldhana (22%) and Akola (13%) and lowest in Wardha (3%) only.

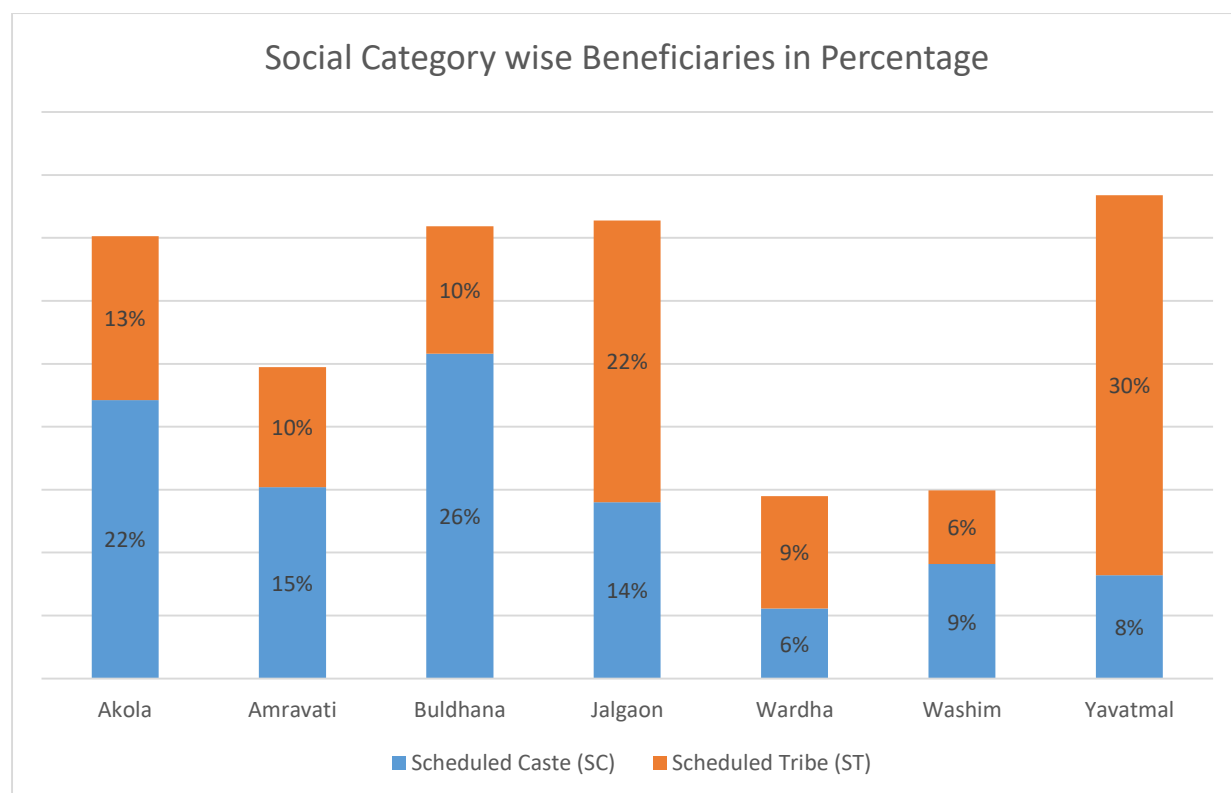


Figure 55: Social Category wise beneficiaries

8.2. Village Profile at a glance

Table 27: Village Profile for CM-VII

S No	District	Taluk	Village	Cencode	Cluster code	Registration	Applications	Pre sanction	Disbursed applications	Beneficiary farmers
1	Akola	AKOLA	Mhaispur	530153	501_ptr-3_08	216	102	10	5	5
2	Akola	AKOLA	Katyar	530023	501_pt-19_03	123	86	45	28	18
3	Akola	AKOT	Kund	529873	501_tes-5_01	203	79	8	7	7
4	Akola	Murtizapur	Aurangpur	530270	501_ptp-3_03	72	97	58	35	27
5	Akola	Murtizapur	Sirso	530199	501_pt-20_02	214	124	24	16	16
6	Akola	Patur	Nandkhed	530404	501_ptr-3_06	344	379	91	33	28
7	Amravati	Achalapur	Ramapur N.Jambhala	531895	503_ptc-2_01	163	77	31	11	9
8	Amravati	Anjangaon	Chincholi Bk.	531830	503_pts-1_03	89	32	10	7	5
9	Amravati	Bhatkuli	Parlam	532852	503_ptb-4_02	45	18	6	5	3
10	Amravati	Chikhaldara	Dhakna	531560	503_teg-3_03	202	265	20	8	8
11	Amravati	Daryapur	Wadner Gangai	532859	503_ptsp-1_05	62	36	14	10	8
12	Amravati	Dharni	Zilpi	531376	503_te-5b_02	270	255	115	86	64
13	Buldhana	Chikhli	Amona	529215	500_gp-7a_01	620	1909	619	425	278
14	Buldhana	Jalgaon Jamod	Manegaon	528257	500_pt-14_07	255	260	96	41	29
15	Buldhana	Malkapur	Malkapur (Rural)	528613	500_ptn-1_04	104	231	69	51	44

16	Buldhana	Mehkar	Januna	529015	500_ptmn-1_02	88	166	58	20	15
17	Buldhana	Nandura	Bhuising	528511	500_ptg-5_01	292	313	42	26	22
18	Buldhana	Sangrampur	Ukadgaon	528363	500_pt-10_07	779	1649	472	150	127
19	Buldhana	Sangrampur	Mohokot	528278	500_te-6a_03	292	261	114	76	50
20	Buldhana	Shegaon	Pahurjira	528464	500_ptgb-1_03	339	647	380	100	83
21	Jalgaon	Bhusawal	Bhusawal (Rural)	527118	499_te-4_02	133	215	140	93	78
22	Jalgaon	Chopda	Tandalwadi	526709	499_te-30_03	1017	2636	811	235	178
23	Jalgaon	Jalgaon	Bhadli Bk	527187	499_te-19_01	206	356	139	56	54
24	Jalgaon	Jamner	Deulgaon	528145	499_te-5c_03	172	228	142	84	72
25	Jalgaon	Muktainagar	Tarode	527038	499_pt-13_03	202	284	81	10	10
26	Jalgaon	Raver	Junone	526876	499_te-2_01	42	27	12	8	6
27	Wardha	Hinganghat	Bambarda	534502	504_wrw-1_02	82	137	51	17	14
28	Washim	KARANJA	Waghola	530999	502_pga-3_03	71	92	26	11	11
29	Washim	MANORA	Rajitnagar	531142	502_pgp-2_05	251	292	67	43	34
30	Yavatmal	Arni	Pandhurna	543282	510_pgaa-4a_02	219	274	94	51	38
31	Yavatmal	Mahagaon	Kali (Tembhi)	543176	510_pg-5_03	167	423	106	27	24
32	Yavatmal	Yavtmal	Loni	542440	510_pga-7a_02	50	96	17	18	10
Two Extra Villages selected for NRM Activity										
33	Wardha	Deoli	Akoli	534247	504_wr-25_04	152	254	94	43	30
34	Washim	Washim	Pandaw Umra	531207	502_pga-1_01	273	286	106	50	44

8.3. FFS MIS Data

Total Number of FFS Conducted

As per the MIS data, a total number of 19972 FFS were conducted till *Rabi* 2022-23. As compare to the total district FFS conducted from kharif 2018- 19 to *Rabi* 2021-22, the highest number of FFS were conducted in Amravati (21%), followed by Akola (20%) and Buldhana (18%). Yavatmal (14%), Jalgaon reported 14% and Washim (7%) and Wardha (5%) reported the least number of FFS conducted. Also the pattern was similar as per the table below.

Table 28: Total FFS Conducted

District		Akola	Amravati	Buldhana	Jalgaon	Wardha	Washim	Yavatmal	Total	
Season	2018-19	Kharif	205	380	204	136	66	55	148	1194
		Rabi	83	96	25	6	19	8	53	290
		Total	288	476	229	142	85	63	201	1484
	2019-20	Kharif	700	780	627	452	160	178	460	3357
		Rabi	282	357	305	184	57	88	210	1483
		Total	982	1137	932	636	217	266	670	4840
	2020-21	Kharif	773	768	681	402	152	209	470	3455
		Rabi	315	372	176	254	69	123	235	1544
		Total	1088	1140	857	656	221	332	705	4999
	2021-22	Kharif	471	477	496	410	128	258	442	2351
		Rabi	301	247	275	257	52	101	151	1384
		Total	772	724	771	667	180	359	593	3735
2022-23	Kharif	535	477	567	495	174	381	545	3174	
	Rabi	338	247	309	341	187	137	181	1740	
	Total	873	724	876	836	361	518	726	4914	
Total		4003	4201	3665	2937	1064	1538	2895	19972	
Percentage		20%	21%	18%	14%	5%	7%	14%		

For *Kharif* season, crop wise data showed highest number of FFS conducted for Cotton (53.79%) followed by Soybean (40.84%) and Pigeon Pea (Tur) (3.31%). FFS for rest of the crops were less than 2% as per the table below.

Table 29: Crop wise FFS Conducted in Kharif Season

Crop Name	Kharif 2019-20	Kharif 2020-21	Kharif 2021-22	Kharif 2022-23	Total FFS	Percentage
Cotton	1728	1903	1493	1689	6813	53.79%
Soybean	1399	1422	1111	1241	5173	40.84%
Pigeon pea (Tur)	88	82	88	161	419	3.31%
Maize	99	31	28	33	191	1.51%
Others	32	16	12	9	69	0.54%
Total	3346	3454	2732	3133	12665	

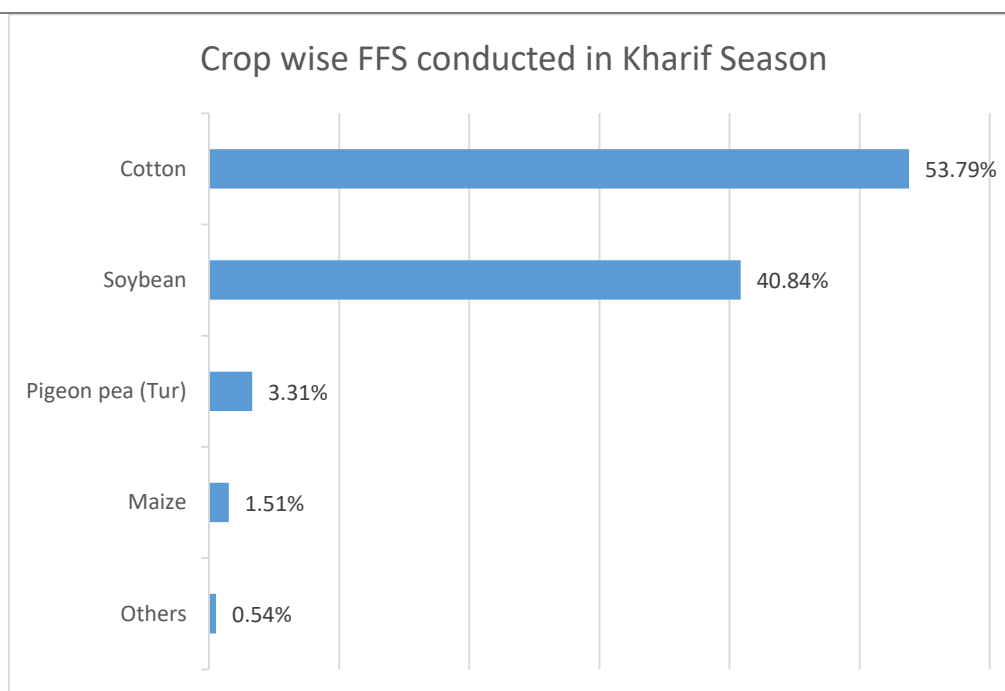


Figure 56: Crop wise FFS Conducted in Kharif Season

For *Rabi* season, crop wise data showed highest number of FFS conducted for Gram (95.83%) followed by *Rabi* Jowar (2.99%) and Vegetables (0.79%). FFS for rest of the crops were less than 0.5% as per the table below.

Table 30: Crop wise FFS Conducted for Rabi Season

Crop Name	Rabi 2019-20	Rabi 2020-21	Rabi 2021-22	Rabi 2022-23	Total	Percentage
Gram	1443	1400	1317	1540	5700	95.83%
Rabi Jowar	32	39	48	59	178	2.99%
Vegetables	22	5	10	10	47	0.79%
Fodder Crop	9	0	5	0	14	0.24%
Wheat	4	1	4	0	9	0.15%
Total	1510	1445	1384	1609	5948	

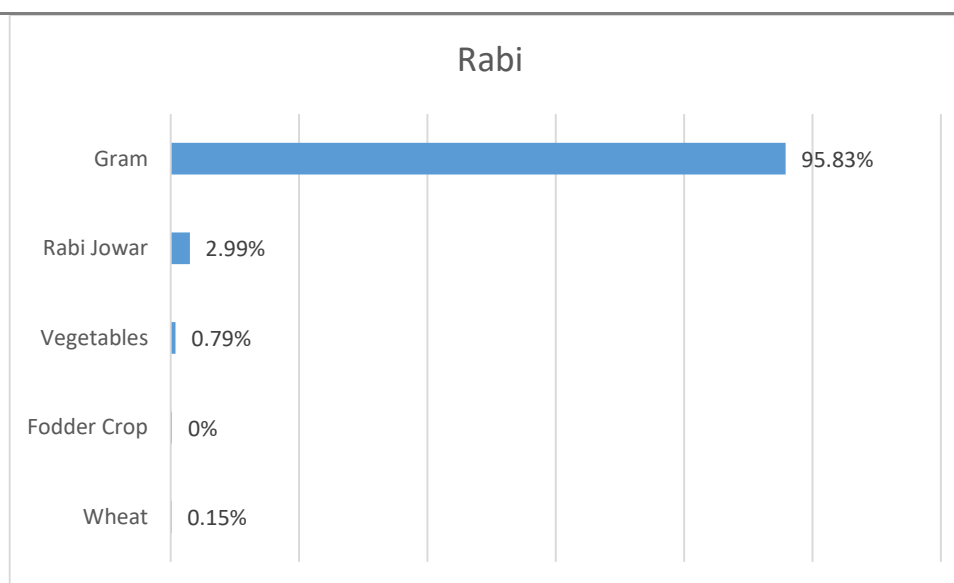


Figure 57: Crop wise FFS Conducted in Rabi Season

Yield Reported for FFS Plots

Yield data obtained for FFS plots for 2019, 2020, 2021, 2022, 2023 was compared for both project and control plots. For 2019, the yield data for the plots is presented in the figure below indicating increase in yield in project plots over control plots in most of the cases in 2019. Maximum increase of 26% was reported in Black gram followed by 25% in Green gram. Cotton reported a 4% reduction in yield as compared to control plots.

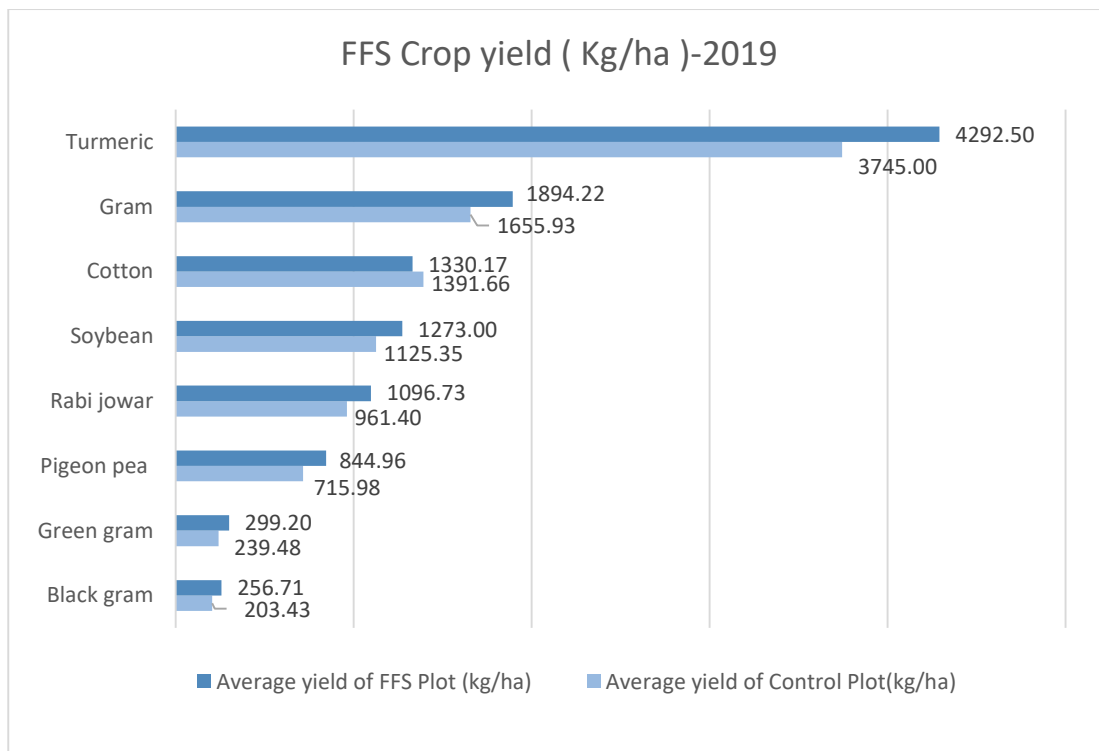


Figure 58: FFS Crop Yield (Kg/ha)- 2019

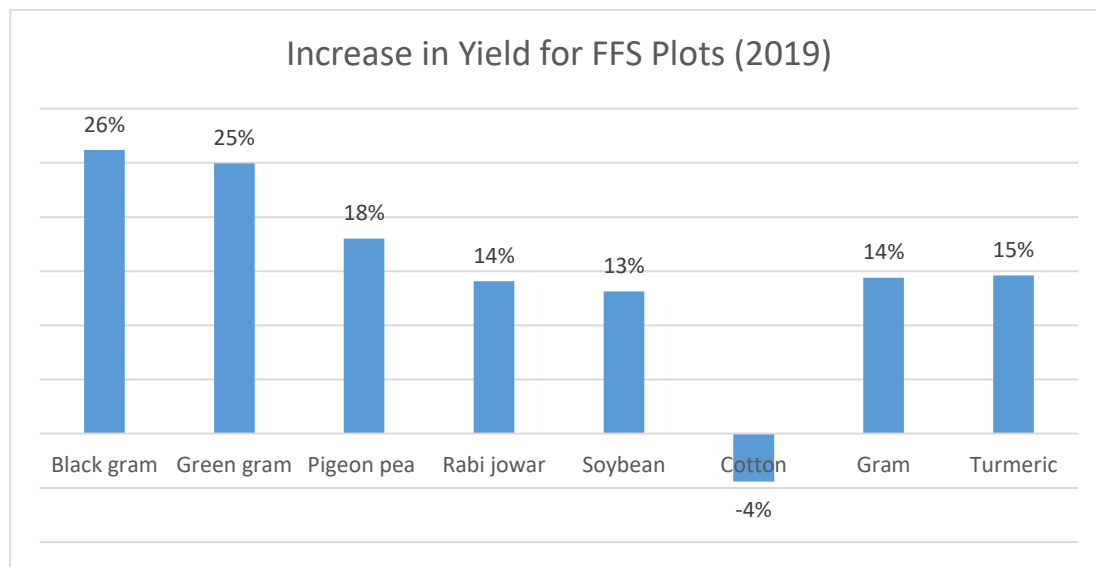


Figure 59: Increase in Yield for FFS Plots (2019)

Data for 2020 was taken March 2021. As per the data, increase in yield for most of the crops was seen in 2020-21. Green Gram reported the highest increase of 28% followed by Black gram 27%. In 2020, cotton reported an increase in yield of 15% over control plots.

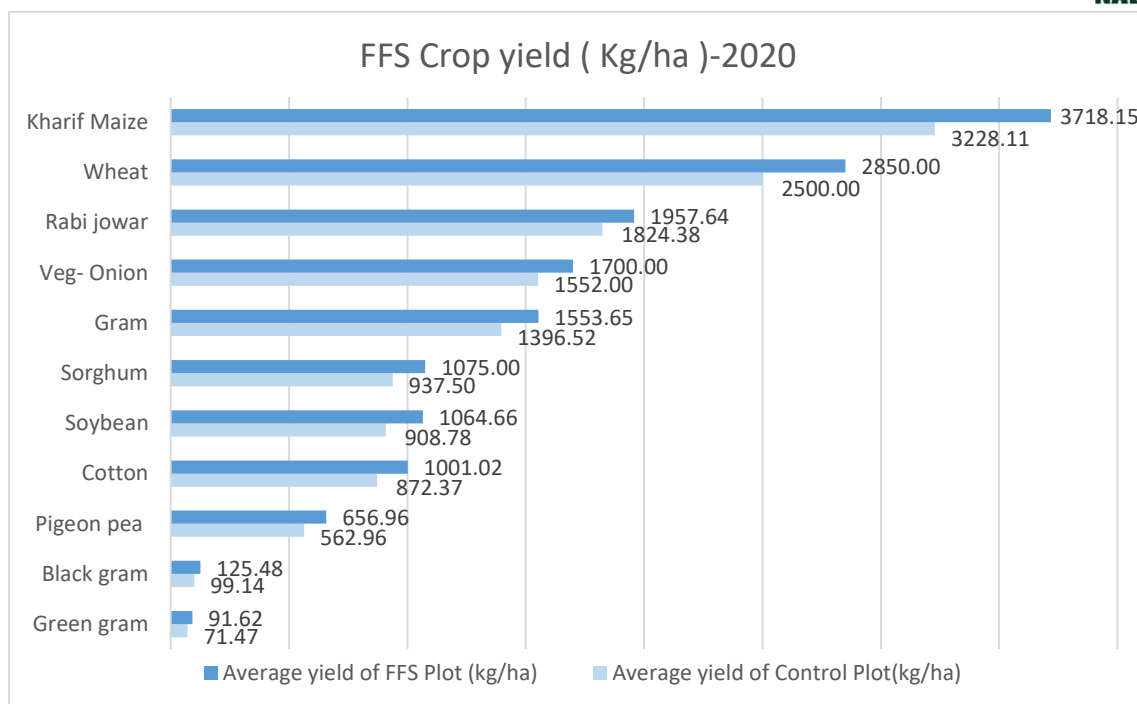


Figure 60: FFS Crop Yield (Kg/ha)-2020

Pigeon Pea and Soybean showed an increase in yield of 17%. Cotton, Sorghum and Maize reported an increase yield of 15% in FFS plots over control plots.

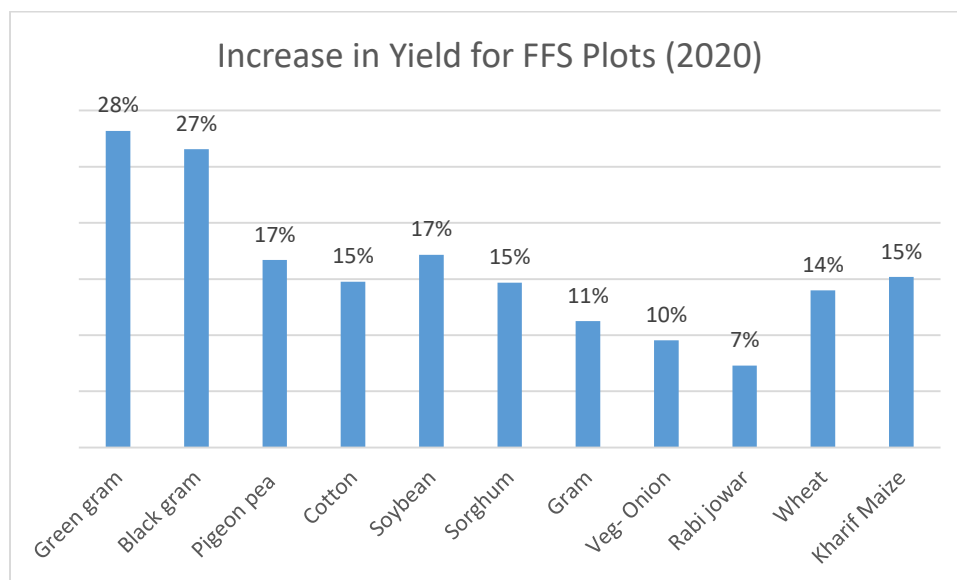


Figure 61: Increase in Yield for FFS Plots-2020

For 2021-22 Kharif and Rabi season Yield reported of FFS plots and Control Plots. It was seen in data overall crops FFS plots yield reported higher than control plots. The FFS plots avg. the yield of Cotton was (509.47 kg/ha.), soybean (1524.70 kg/ha.)

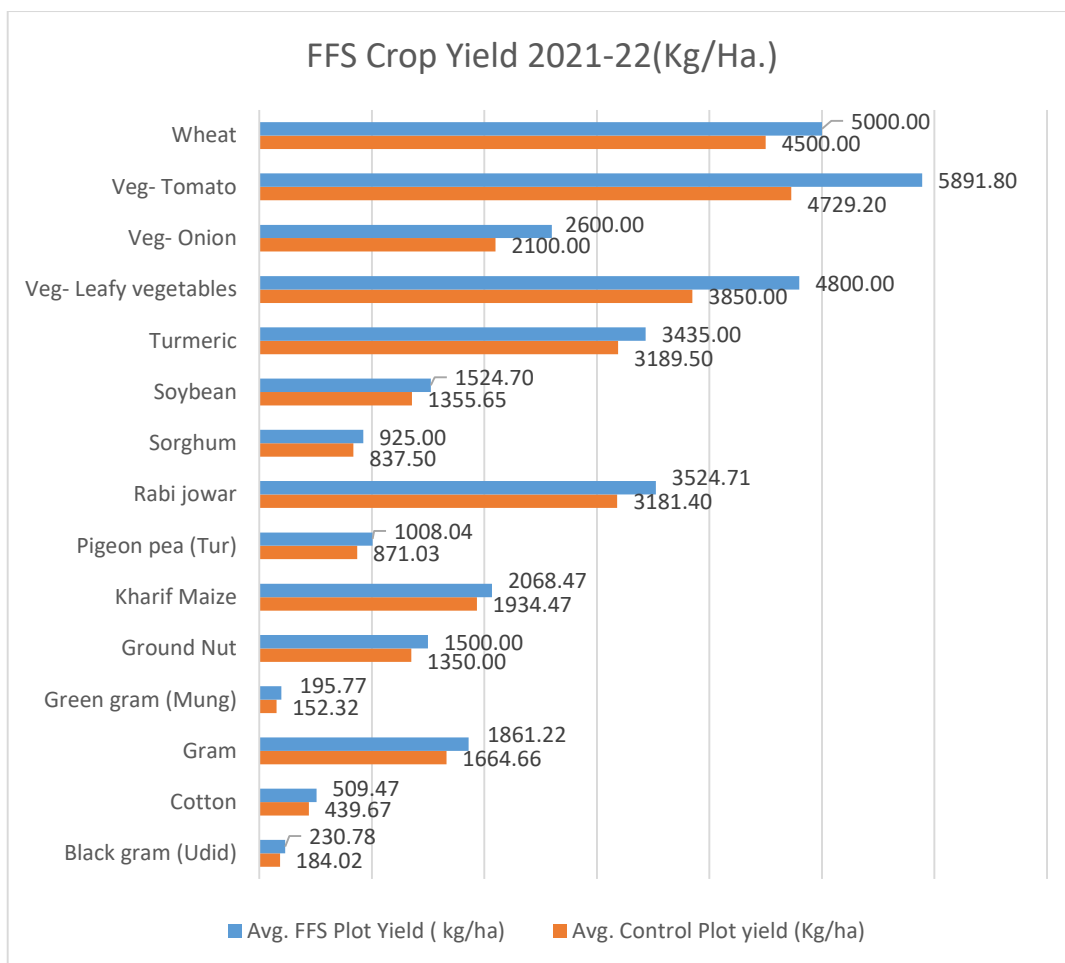


Figure 62: FFS Crops Yield (Kg/ Ha) 2021

FFS plots 2021-22 showed that the increase in yield more than 12% as compare to control plots. The major crops, Cotton (16%), Soybean (12%), Pigeon pea(16%), Gram(12%), Green gram(29%) etc.

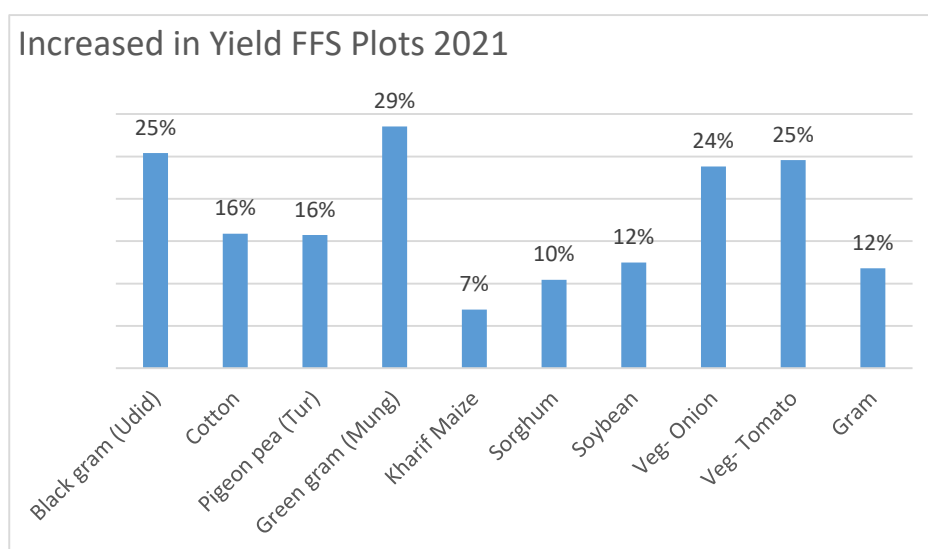


Figure 63: Increased in yield for FFS plots 2021

FFS plots 2022-23 showed that the increase in yield more than 12% as compare to control plots. The major crops, Cotton (15%), Soybean (17%), Pigeon pea(17%), Gram(11%), Green gram(28%) etc.

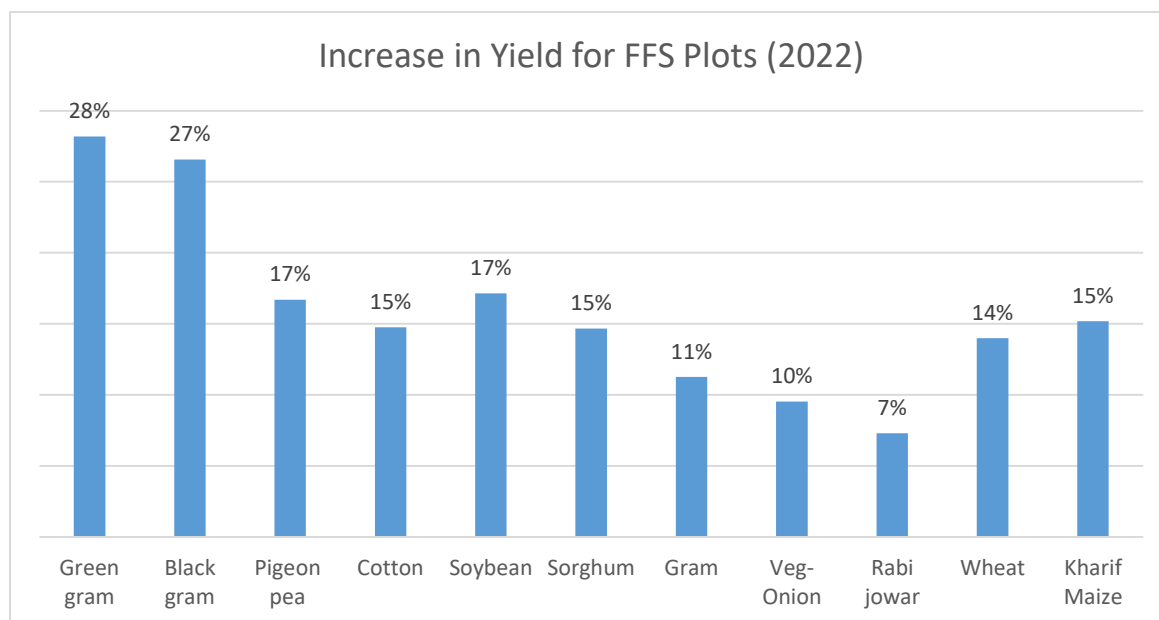


Figure 64: Increased in yield for FFS plots 2022

Soil Testing done for FFS Plots

As per the Soil testing MIS data, 39.68% of the testing was done for Cotton plots followed by 30.71% for Soybean and 24.33% for Gram during FFS.

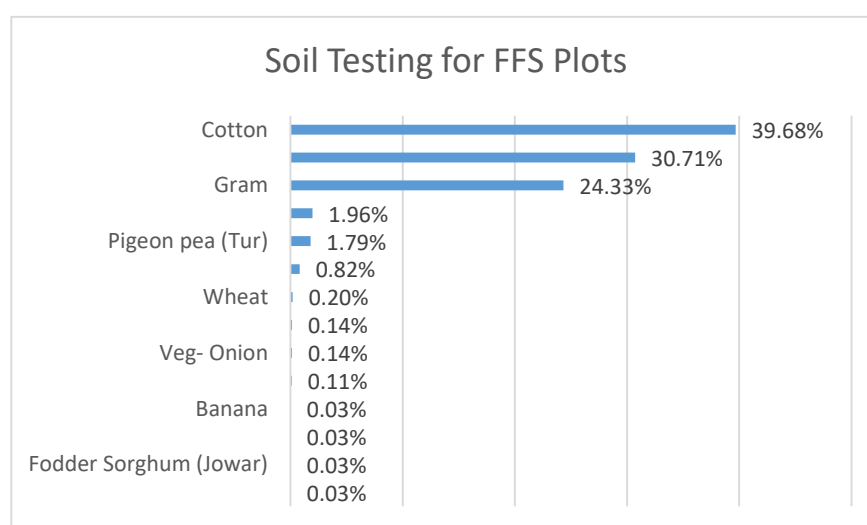


Figure 65: Soil Testing for FFS Plots

Seed Production of Climate Resilient Varieties

Seed production details of climate resilient variety season wise from 2018 to 2023 is shown in the table below.

Table 31: Seed Production of Climate Resilient Varieties

Crop Name	Variety	No. of Growers	Grower % crop variety
Kharif 2018-19			
Black Gram	AKU-10-1, AKU-15, TAU-1,	68	9.7%
Green Gram	BM-2002-1, BM-2003-2, KOPARGAON, UTKARSHA	62	8.8%
Pigeon Pea	BSMR-736, ICP-8863, ICPL-87119, PKV TARA, VIPULA	38	5.4%
Soybean	JS-2029, JS-335, JS-9305, MACS-1188, MAUS-158MAUS-162, MAUS-71	531	75.4%
Jute	JRO-524	5	0.7%
Total		704	
Rabi 2018-19			
Gram	DIGVIJAY, JAKI-9218, PHULE VIKRAM, RAJ VIJAY, RAJ-202, RAJ-203, RAJVIJAY-202, RAJVIJAY-203, RAJVIJAY-204, VIJAY, VIRAT	424	86.0%
WHEAT	GW-496, HI-8663, LOK-1, LOK-2, MACS-6222PDKV-SARDAR, RAJ-4037	59	12.0%
IMP JOWAR	PKV-KRANTI	3	0.6%
IMP RABI JOWAR	REVATI	7	1.4%
Total		493	
Kharif 2019-20			
Black Gram	AKU-10-1, AKU-15, JS-335, MU-44, TAI-1TAU-1, UNNATI, VIJAY	220	11.2%
COTTON	AKH 081,RAJAT BT	6	0.3%
Green Gram	BM-2003-02, BM-2003-2, MAUS-158, MAUS-71, PKV-AKM-4PKVM-8802, UTKARSHA	169	8.6%
HY. COTTON	BN-1 BT	4	0.2%

JUTE	JRO-524	34	1.7%
LITTLE MILLET	Phule Ekadashi	1	0.1%
Pigeon Pea	BDN-716, BMSR-736, ICP-8863, ICPL-87119, PKV TARA	144	7.3%
Soybean	JS-2029, JS-335, JS-9305JS-93-05, MAC-S1188, MAUS -71,MAUS-158,MAUS-162,NRC-86	1382	70.3%
TIL	JLT-408	6	0.3%
Total		1966	

Rabi 2019-20

Gram	PHULE SAMADHAN, DIGVIJAY, JAKI-9218, PHULE VIKRAM, RAJ VIJAY, RAJ-202,RAJ-203,RAJVIJAY-204, VIJAY, VIRAT , M-35 , Phule Revati	904	81.2%
Wheat	NIAW-1415, GW-496, HI-8663, LOK-1, LOK-2, MACS-6222,PDKV-SARDAR, RAJ-4037, Phule Netravati	124	11.1%
Jawar	PBN.MOTIPHULE ,REVATI , PHULE SUCHITRA, PHULE VASHUDHA	85	7.6%
Total		1113	

Kharif 2020 -21

Black Gram	AKU-10-01, AKU-15, TAI-1	425	11.6%
COTTON	AKA-5, AKA-7, RAJAT-BT	7	0.2%
Green Gram	AKM-8802, BM-2003-02, PKVM-4, Utakarsha	481	13.1%
HY COTTON	AC-738 BT, BN-1 BT	4	0.1%
IMP COTTON	AKA-5, RAJAT BT	25	0.7%
Jute	JRO-524	185	5.0%
Pigeon Pea	BDN 716, , BSMR 736, ICP8863, ICPL 87119, MPV-106, P. RAJESHWARI, PKV Tara	262	7.1%
Soybean	JS-2029, JS-335, JS-9305JS-93-05, MACS-1188, MAUS 158, MAUS -71,MAUS-162,MAUS-612,NRC-86	2256	61.4%
Til	JLT-408	28	0.8%
Total		3673	

Rabi 20-21

Gram	AKAW-4627, AKGS 1109, BG-10216, BG-3062, DIGVIJAY, JAKI-9218, KRIPA, PDKV KANCHAN, PHULE VIKARAM, PHULE VIKARANT, RAJVIJAY 202	1170	86.3%
Jawar	PKV KRANTI, PHULE REVATI, M-35-1, PBN MOTI, M-35, VASUDHA, SUCHITRA, PHULE VASUDHA	26	1.9%
Safflower	PKV-PINK	6	0.4%
Wheat	GW-496, AKAW-4627, HI-8663, PDKV-SARDAR , GW-496 , LOK-1, GW-496, PHULE SAMADHAN, MACS-6222, LOK-I	144	10.6%
Onion	AFLR	10	0.7%
Total		1356	

Kharif 2021-22		Percentage	
BAJARA	ABPC-4-3	1	0.04%
BHENDI	ARKA ANAMICA	1	0.04%
CLUSTERBEAN	GAURI	1	0.04%
COEPEA	PUSA PRAVATI	1	0.04%
COTTON	AKA-5	1	0.04%
JUTE	JRO-524 JRO-524	63	2.41%
Green Gram	BM-2003-02, BM-2002-1, BM-2003-02, BM-2003-2, PKV-8802, PKV-AKM 4, UNNATI, UTKARSH, UTKARSHA	259	9.93%
Soybean	JS-335, JS-20116, JS-20-116, JS-20-34, JS-335, JS-93 05, JS-9305 KDS-726 (P. SANGAM), MACS-1281, MAUS-158, MAUS-612, AMS-1001 (YG), AMS-MB-5-18, JS-20-94, JS-20-98, JS-335, KDS-726 (P. SANGAM),	1710	65.54%
SUNHEMP	JRJ-610	2	0.08%
TIL	JLT-408	5	0.19%
Pigeon Pea	BDN-716, BSMR-736, ICP-8863, ICPL-87119, MPV-106, PHULE-12, PKV-TARA, ICP-8863	202	7.74%

Black Gram	BDN-716,BSMR-736,ICP-8863,ICPL-87119,MPV-106,PHULE-12,PKV TARA,PKV-TARA,ICP-8863	363	13.91%
Total		2609	

Rabi 2021-22		Percentage	
Gram	DIGVIJAY, JAKI-9218, PHULE VIKRAM, RAJ VIJAY, RAJ-202, RAJ-203, RAJVIJAY-202, RAJVIJAY-203, RAJVIJAY-204, VIJAY, VIRAT	1227	81%
WHEAT	GW-496, HI-8663, LOK-1, LOK-2, MACS-6222PDKV-SARDAR, RAJ-4037	137	9%
IMP JOWAR	PKV-KRANTI	159	10%
Total		1523	

Kharif 2022 -23			
Black Gram	AKU-10-01, AKU-15, TAI-1	425	11.6%
COTTON	AKA-5, AKA-7, RAJAT-BT	7	0.2%
Green Gram	AKM-8802, BM-2003-02, PKVM-4, Utakarsha	481	13.1%
HY COTTON	AC-738 BT, BN-1 BT	4	0.1%
IMP COTTON	AKA-5, RAJAT BT	25	0.7%
Jute	JRO-524	185	5.0%
Pigeon Pea	BDN 716, , BSMR 736, ICP8863, ICPL 87119, MPV-106, P. RAJESHWARI, PKV Tara	262	7.1%
Soybean	JS-2029, JS-335, JS-9305,JS-93-05, MACS-1188, MAUS 158, MAUS -71,MAUS-162,MAUS-612,NRC-86	2256	61.4%
Til	JLT-408	28	0.8%
Total		3673	

Rabi 22-23			
Gram	AKAW-4627, AKGS 1109, BG-10216, BG-3062, DIGVIJAY, JAKI-9218, KRIPA, PDKV KANCHAN,PHULE VIKARAM,PHULE VIKARANT,RAJVIJAY 202	1170	86.3%
Jawar	PKV KRANTI,PHULE REVATI,M-35-1,PBN MOTI,M-35,VASUDHA,SUCHITRA,PHULE VASUDHA	26	1.9%

Safflower	PKV-PINK	6	0.4%
Wheat	GW-496, AKAW-4627, HI-8663, PDKV-SARDAR , GW-496 , LOK-1, GW-496, PHULE SAMADHAN, MACS-6222, LOK-I	144	10.6%
Onion	AFLR	10	0.7%
Total		1356	

Area under Seed Production: Area under seed production for major crops is given in the figures below. Total area in Karif 2018-19 was 1860.4 Ha whereas in *Rabi* it was 1278.8 Ha. Majority of the area was under Soybean.

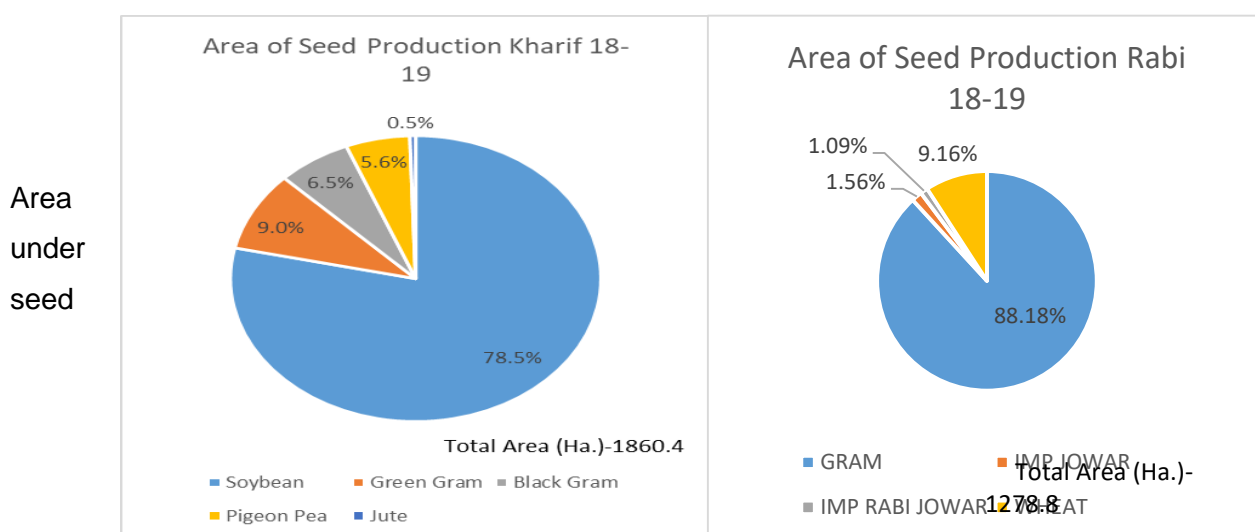


Figure 67: Area under Seed Production 2018-19

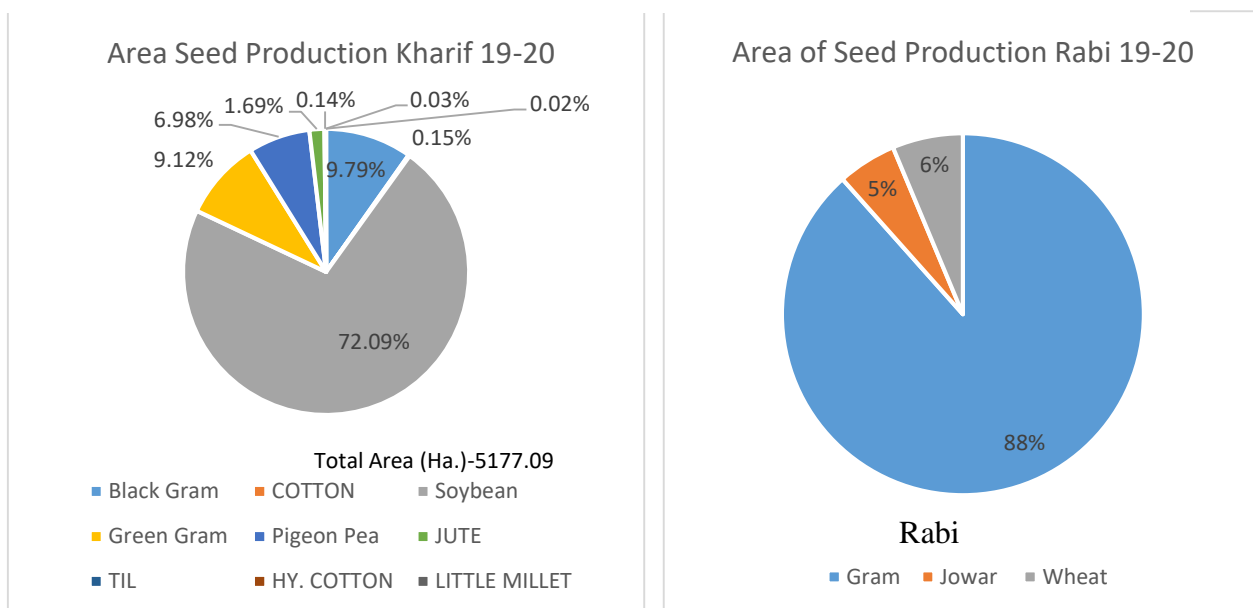


Figure 66: Area under Seed Production 2019-20

production for 2019-20 Kharif and *Rabi* season was 5177.09 Ha and 3375.68 ha respectively, signifying an increase of around 178% in Kharif and 164 % in *Rabi* season. This is possible due to the extensive awareness and project activities done as part of the project.

Area under seed production in year 2020-21 in kharif and *Rabi* season was 8440.05 ha. and 3863.84 ha. respectively. In kharif soybean was major seed production crop (59.7%)and *Rabi* Gram was major seed production crop (84.8%)

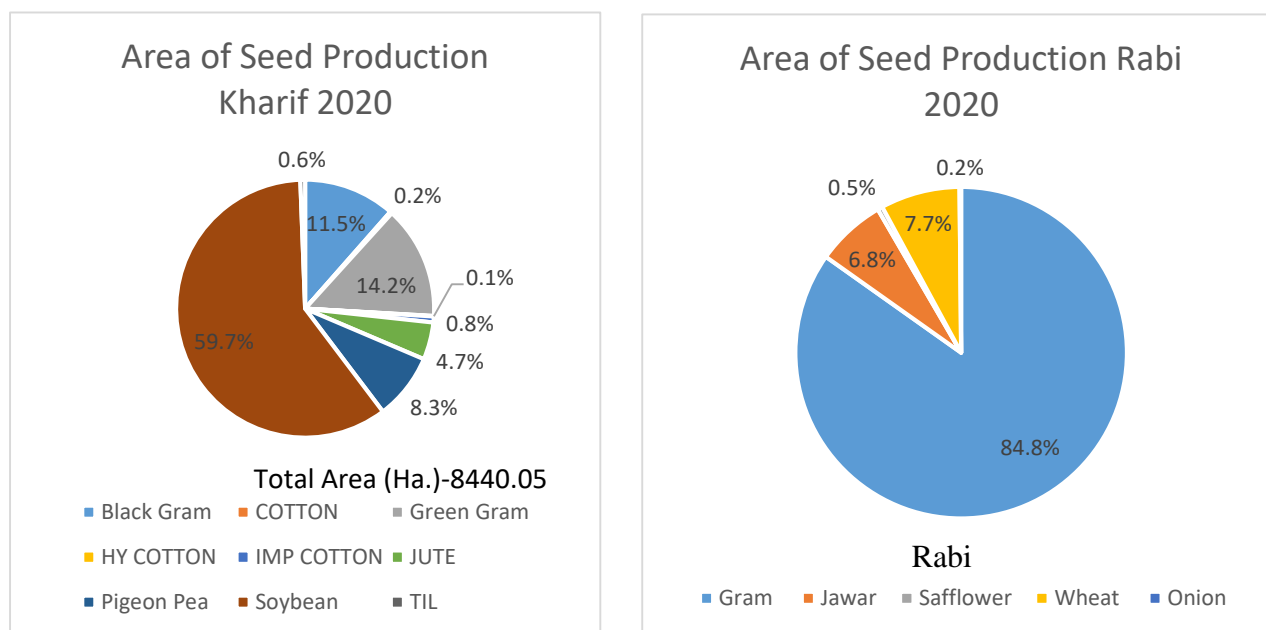
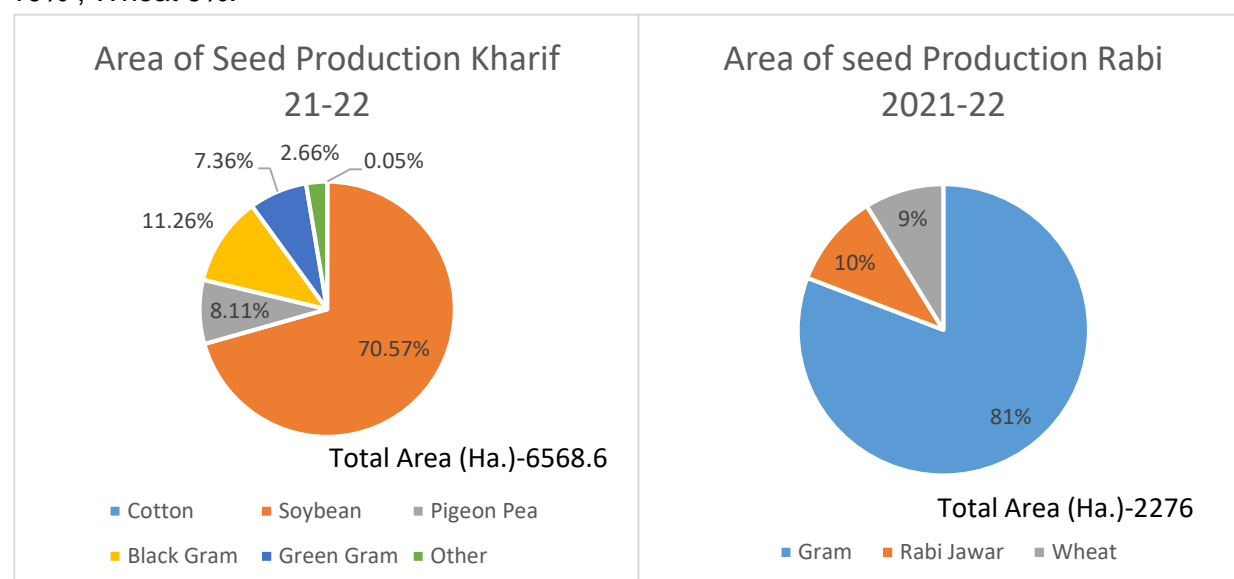


Figure 68: Area under Seed Production 2020-21

Area under seed production in kharif 2021-22 was 6568.6 Ha. The major seed production was Soybean (70%) followed by Pigeon pea(8.11%), etc. Area under seed Production in *Rabi* 2021-22 was 2276 ha. The major production in *Rabi* was Gram 81% followed by *Rabi* Jawar 10% , Wheat 9%.



Area under seed production in kharif 2022-23 was 5593.2 Ha. The major seed production was Soybean (87%) followed by Moog (5%), Tur (4%), Udid (4%) and Jute (1%). Area under seed production in Rabi 2022-23 was 4429.9 ha. The major production in Rabi was Gram 89% followed by Wheat (7%), IMP. Rabi Jawor (4%), Onion (0.4%) and Mustard (0.08%).

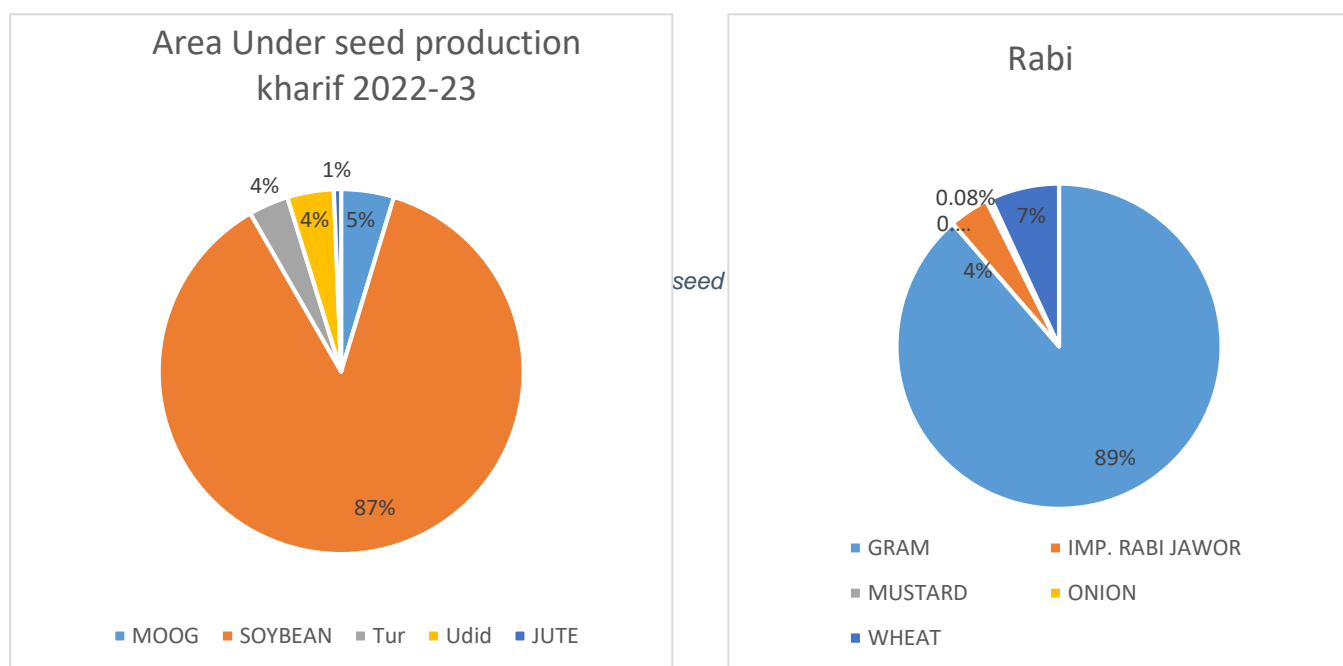


Figure 70: Area of seed Production 2022-23

8.4. FPCs/SHGs/FIGs

In this sub section, the status of support received by FPOs is presented. The figure below highlights the number of proposals that were sanctioned and disbursements made.

Total number of applications for FPOs (FPC, SHG, FIG) till March 31, 2023 were 1516. Out of this, disbursement has been made for 808 applications. The total number of FPOs disbursements were 331 out of 681 applied. The highest number of applications were from Akola (521), followed by Washim (408), Buldhana (179), Amravati (155), Jalgaon (91), Wardha (91) and Yavatmal (71).

Overall, 49% of the disbursements have been completed for the applications for FPOs. Highest disbursements were reported in Akola (319), Washim (213), Buldhana (88), Amravati (63), Wardha (45), Jalgaon (42), Yavatmal (38).

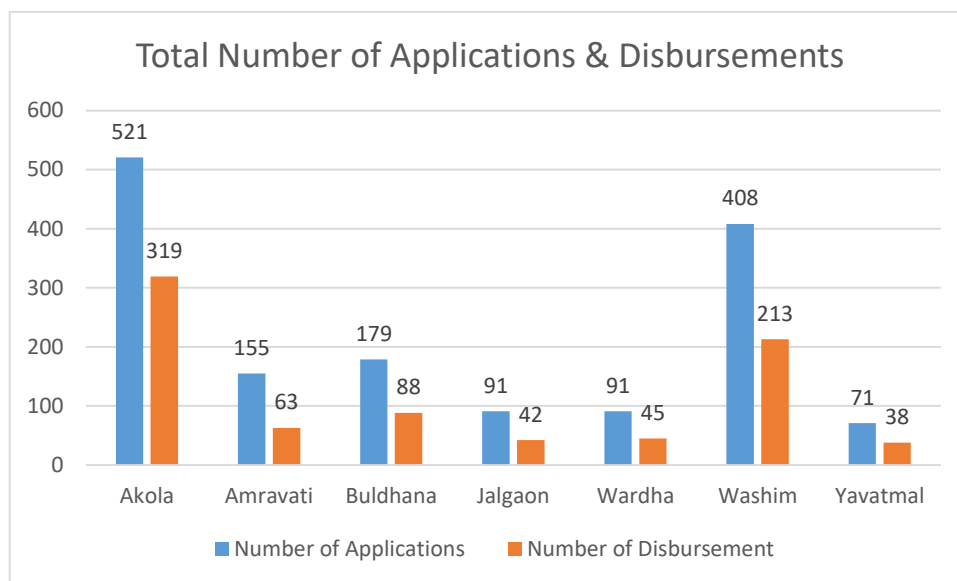


Figure 71: No. of proposals Sanctioned for FPCs

The total disbursement for the FPOs in Rest of Project area up to 31 March 2023 was Rs. 7908.34 lakh. The highest disbursement district was Akola (37%), followed by (23%), Buldhana (15%), Jalgaon (8%), Amravati & Wardha (7%) and the lowest was Yavatmal only (3%).

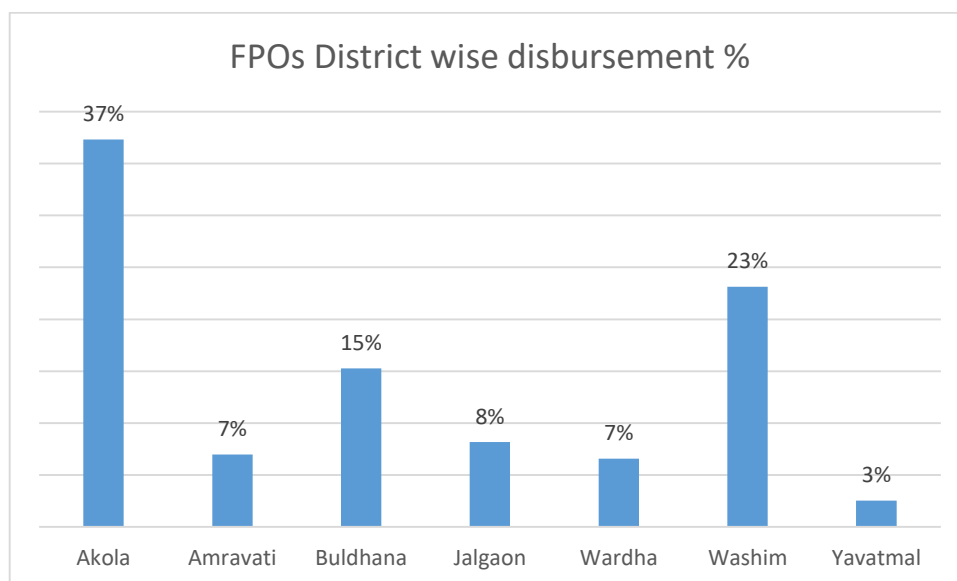


Figure 72: FPOs District-wise disbursement %

Table 32: Total Disbursements- FPCs/SHGs/FIGs

Activities	Number of Proposals			Total Proposal	Total Disbursed (Lakh)
	Farmers group	FPC	SHG		
Custom Hiring Centre (CHC)	56	41	233	330	4156.12
Godown	9	19	38	66	556.84
Other Agribusiness Activity	1	9	14	24	134.76
Post harvest/ Processing unit	2	11	15	28	180.97
Grand Total	68	80	300	448	5028.69

For FPCs/SHG/FIGs, total number of proposals sanctioned till March 31, 2023 were 448. Details of the amount disbursed for FPCs/SHGs/FIGs is presented in the table above. Major business activities are Custom Hiring Centers, Construction of Godown, and other agribusiness activities. Total amount of Rs. 5028.69 Lakhs has been disbursed. Majority of the disbursements (83%) have been made for Custom Hiring Centers, followed by Construction of Godown (11%).

8.5. VCRMC & Krushi Tai

As of March 31, 2023, 99% (1643) of the VCRMC were formed out of total 1650 Gram Panchayats, covering 2514 villages. E-gram sabha has been conducted in 23% cases. Total 1917 Krushi Tai have been appointed in Rest of Project Area as of March 31, 2023..

Table 33: Status of VCRMC & Krushi Tai

S. No	District	Villages	Gram Panchayats	Existing functional VCRMC	E-gram sabha conducted	No. of Krushi Tai's
1	Akola	498	310	308	75	348
2	Amaravati	532	283	282	3	387
3	Buldhana	441	309	309	188	339
4	Jalgaon	460	355	352	97	413
5	Wardha	125	65	65	1	92
6	Washim	149	116	115	14	120

District	No. of Event	Male Participants	% Male	Female Participants	% of Female	Total Participants	Others	Grand Total
Akola	4626	56105	74.35%	19357	25.65%	75462		
Amravati	4042	54068	72.67%	20335	27.33%	74403		
Buldhana	12079	103899	68.23%	48385	31.77%	152284		
Jalgaon	5729	57395	70.52%	23995	28.48%	81390		
Wardha	1414	20968	74.58%	7148	25.42%	28116		
Washim	1993	21448	68.54%	9846	31.46%	31294		
Yavatmal	4336	56184	74.66%	19070	25.34%	75254		
Grand Total	34219	370067	71.41%	148136	28.59%	518203	63707	581910
7	Yavatmal	309		212		212	0	218
	Grand Total	2514		1650		1643	378	1917

**RoPA area online training participant's details calculated by overall district wise percentage as discussed with social expert*

8.6. Training and Capacity Building

Training Activities

The details of trainings attended by the different stakeholder under the PoCRA project is indicated in the Table below. In total 34219 events have been conducted till March 31, 2023 Total 518203 + participants have been trained under the project. Of the total members who attended trainings, 71.41% were male and 28.59% of them were female members.

Exposure Visits

In total, 132 exposure visit events were organized for total of 2735 participants. Out of the total participants, 72% were male and 28% of them were female.

Table 34: Exposure Visits

District	Total No. of Event Organized	Male Participants	% male	Female Participants	% Female	Total Participants
Akola	1	102	100%	0	0%	102
Amravati	12	255	88%	35	12%	290

Buldhana	55	666	64%	377	36%	1043
Jalgaon	5	54	73%	20	27%	74
Wardha	21	400	72%	159	28%	559
Washim	22	235	68%	110	32%	345
Yavatmal	16	251	78%	71	22%	322
Grand Total	132	1963	72%	772	28%	2735

9. RFID Indicators for CM-VII

Table 35: RFID Indicators for Concurrent Monitoring Round-VII

PDO Level Indicators

S No (as per PAD)	Indicator(s)	Definition	Methodology	Frequency of Measurement	CM-VII Value (till 31 st March 2023)
5	Direct project beneficiaries: number of farmers reached with agricultural assets of services <i>Number of farmers reached with agricultural assets or services (% of female)</i>	<i>This indicator measures the number of farmers who were provided with agricultural assets or services as a result of project support.</i>	<ul style="list-style-type: none"> The list of total beneficiaries under the project in the Rest of the Project area was taken from the MIS data till March 31, 2023 For DBT beneficiaries, and FFS beneficiaries (HF & GF), Training/Exposure visits, online training, and workshop conducted Out of this, total female beneficiaries are filtered and % was calculated accordingly. 	Semi-Annual	Overall: 9,79,588 (Females-19%) <ul style="list-style-type: none"> Total DBT Farmers: 99,471 (Females-28%) Total Host Farmers: 7378 (Females- 13%) Total Guest Farmers: 2,58,387 (Females-18%) Total Participants in training/exposure visits: 6,17,752 (Females-20%)

Intermediate Outcome Indicators - Component A: Promoting Climate-resilient Agricultural Systems

No	Indicator(s)	Definition	Methodology	Frequency of Measurement	CM-VII Value (till 31 st March 2023)
6	Farmers adopting improved agricultural technology <i>Farmers adopting improved agricultural technology promoted</i>	<i>This indicator measures the number of farmers who have adopted an improved agricultural technology promoted by activities supported by the project</i>	<ul style="list-style-type: none"> The calculations are done from the primary data captured through beneficiary questionnaires in Project & Control Villages Adoption of at least one of the improved agriculture technology was considered based on the technologies asked in the Beneficiary questionnaire Total of the technology adopted was calculated and % calculated with the overall total beneficiaries surveyed 	Annual	P-61%, C-51% <i>(These results are based on field surveys in 32 project & 16 control villages)</i>
7	Improved water-use efficiency at the farm level <i>Area provided with new/improved irrigation or drainage services (in ha)</i>	<i>This indicator measures ha the total area of land provided by the project with new or improved irrigation or drainage services</i>	<ul style="list-style-type: none"> The list of Activities under Improved water-use efficiency (Sprinkler, Drip, Pipes, Water Pumps, Farm Ponds, Wells & Recharge Structures) activity under the project was taken from the MIS data till March 31, 2023 For Sprinkler & Drip Irrigation, the maximum area mentioned under the activity was taken For Pipes, Water Pumps, Farm Ponds & Well Recharge, an area of 1ha had been assumed Total area under all the above activities mentioned was calculated 	Annual	Total Area- 1,25,903 ha <ul style="list-style-type: none"> Area under Sprinkler: 42568 ha Area under Drip: 64939 ha Area under Water pump & sprinkler: 428 ha Area under Pipes: 8195 ha Area under pumps: 9011 ha Area under farm ponds: 389 ha Area under well & recharge structure: 373 ha

No	Indicator(s)	Definition	Methodology	Frequency of Measurement	CM-VII Value (till 31 st March 2023)
8	Improved availability of surface water for agriculture <i>Surface water storage capacity from new farm and community ponds (in 1,000 m³)</i>	<i>This indicator measures the surface water storage capacity created with to project-supported farm and community ponds.</i>	<ul style="list-style-type: none"> The list of individual new farm ponds constructed under the PoCRA project was taken from the MIS data till March 31, 2023 Volume for total 83 farm ponds & 55 community farm ponds was calculated individually as per the standard guidelines under PoCRA Total volume was taken as the Storage Capacity under new & community farm ponds created 	Semi Annual	Total Storage Capacity under new & community farm ponds: 2333.09 (1000 m³) Storage Capacity under Farm Ponds: 2246.09 (1000 m ³) Storage Capacity under Community Farm Ponds: 87 (1000 m ³)
9	Enhanced Soil Health at Farm Level <i>Area with GAPs for improved management of saline and sodic soils (in ha)</i>	<i>This indicator tracks the farm production area in ha where Good Agricultural Practices (GAP) are applied by farmers for improving management of saline and sodic soils in project villages</i>	<ul style="list-style-type: none"> The list of saline & sodic activities under the PoCRA project was taken from the MIS data till March 31, 2023 In Saline & Sodic villages, GAPs are taken as FFS Conducted, Drip, Sprinkler, Farm Ponds & Water Pumps For Sprinkler & Drip Irrigation, the maximum area mentioned under the activity was taken For Pipes, Water Pumps, an area of 1ha had been assumed Total area covered under the above activities was taken as the GAPs adopted in Saline & Sodic Villages 	Semi Annual	48,114.96 ha

Intermediate Outcome Indicators -Component B: Climate-smart Post-Harvest Management and Value-chain Promotion


No	Indicator(s)	Definition	Methodology	Frequency of Measurement	CM-VII Value (till 31 st March, 2023)
10	Seeds supply: Promotion of climate resilient crop varieties <i>Oilseeds (soybean), Pulses (pigeon, chickpea) production area under cultivation w/ certified seeds of improved varieties (Share in %)</i>	<i>This indicator measures the share of production area in the project with oilseeds and pulses that was cultivated using certified seeds of improved varieties.</i>	<ul style="list-style-type: none"> The calculations are done from the primary data captured through beneficiary questionnaire in Project & Control Villages Area under Climate Resilient Variety for three major crops (Chickpea, Pigeon pea & Soybean) was determined from total responses Total area under the three crops was taken % was calculated by dividing (Area under Climate Resilient Variety/Total Area under the three Crop) 	Annual	Overall P- 85%, C- 81% Soybean P-83%, C-83% Chickpea P-87%, C-87% Pigeon pea P-68%, C-69% (These results are based on field survey in 32 project & 16 control village)
11	Number of projects supported FPCs with growth in annual profits	This indicator reports the number of project-supported Farmer Producer Companies with growth in annual profit	<ul style="list-style-type: none"> List of FPCs for CM-VII was taken from PMU Audited Financial Statements of the FPCs were obtained during the survey Number of PoCRA-supported FPCs reporting profit are taken 	Annual	Out of a total of 21 FPCs, 5 FPCs showed profits in FY 2022-23.







No	Indicator(s)	Definition	Methodology	Frequency of Measurement	CM-VII Value (till 31 st March, 2023)
14	Number of approved participatory mini watershed plans implemented	This indicator reports the number of approved participatory mini watershed plans implemented	<ul style="list-style-type: none"> The list of CDPs & VDPs approved under the PoCRA project in the Rest of the Project area was taken from the MIS data till March 31, 2023 The data was taken for Phase-I villages where Micro-planning had been completed 	Semi-Annual	No. of Approved Participatory mini watershed plans: 68 As village is basic unit of project of implementation, the project have developed VDP for Phase-II & III villages. No. of Approved VDP: 1964

Annexure-I: Audit Report of FPCs under CM-VII







Status of FPCs covered under CM-VII													
Sr. No.	FPC Name	District	Taluka	Village	Activity	No. of Shareholders	Establishment Year	2020-21		2021-22		2022-23	
								Annual Turn Over (Rs)	Net Profit (Rs)	Annual Turn Over (Rs)	Net Profit (Rs)	Annual Turn Over (Rs)	Net Profit (Rs)
1	Krushibeej Farmer Producer Company Ltd.	Akola	Barshitakali	Kanheri	Construction of Godown/ Small Warehouse	260	2021	6805	0	0	0	Not Received	Not Received
2	Kapshi Farmer Producer Company Ltd.	Akola	Akola	Kapshi	Refrigerated Van or Vegetable/Fruit carrier/ Vehicle	260	2021	NA	NA	133660	42200	1385347.95	14618.66
3	Krushi Vigyan Madhuratna Farmer Producer Company Ltd.	Akola	Barshitakali	Kanheri	Food Processing Unit	310	2021	NA	NA	1787055	1167	Not Received	Not Received
4	Murtizapur Shetkari Producer Company Ltd.	Akola	Murtizapur	Bhagora	Establishment of Custom Hiring Centers (CHC)	311	2018	545450	807	940860	3740	972560	4249
5	Dattatray Farmer Producer Company Ltd.	Amravati	Morshi	Ashtagaon	Establishment of Custom Hiring Centers (CHC)	110	2021	NA	NA	16000	3960	Not Received	Not Received
6	Samruddha Melghat Farmer Producer Company Ltd.	Amravati	Chikhaldara	Chinchkheda	Establishment of Custom Hiring Centers (CHC)	200	2021	NA	NA	84026	-15000.74	Not Received	Not Received
7	Ganorkar Aroma Farmer Producer Company Ltd.	Amravati	Warud	Shenurjana ghat	Medicinal/Aromatic Plants Processing Unit .	179	2021	NA	NA	72500	-27500	Not Received	Not Received
8	Krushisanklap Farmer Producer Company Ltd.	Buldhana	Buldhana	Malwandi	Construction of Godown/ Small Warehouse .	316	2021	5000	-5000	1007638.72	-78154.88	Not Received	Not Received
9	Rudraj Agrotech Farmer Producer Company Ltd.	Buldhana	Buldhana	Moudhala	Establishment of Custom Hiring Centers (CHC)	110	2022	NA	NA	56250	-56250	Not Received	Not Received
10	Swami Samarth Farmer Producer Company Ltd.	Buldhana	Mehkar	Janephal	Establishment of Custom Hiring Centers (CHC)	100	2021	NA	NA	57003	1756	1500725	45447
11	Vidarbha Samruddhi Krushi Producer Company Ltd.	Buldhana	Sindkhed	Warwand	Construction of Godown/ Small Warehouse	285	2020	413114	13497	1430525	78254	5653921	62269
12	Rozodak Farmers Producer Company Pvt. Ltd.	Jalgaon	Raver	Rozoda	Turmeric Processing Unit	150	2020	NA	NA	NA	NA	Not Received	Not Received
13	Parnanetra Farmers Producer Company Ltd.	Wardha	Ashti	Talegaon Shyamjipant	Pulse Mill	525	2017	333000	897	549930	21360	Not Received	Not Received
14	Prasad Farmer Producer Copmany Ltd.	Washim	Risod	Kinkheda	Construction of Godown/ Small Warehouse	257	2021	NA	NA	50006	-394309	1841258	-225053
15	Prasad Farmer Producer Copmany Ltd.	Washim	Risod	Kinkheda	Establishment of Custom Hiring Centers (CHC)	257	2021	NA	NA	50006	-394309	1841258	-225053
16	Lodhaimata Farmer Producer Company Ltd.	Washim	Risod	Asola	Establishment of Custom Hiring Centers (CHC)	551	2020	880	-880	1783	5	Not Received	Not Received
17	Satyakishor Agro Farmer Producer Company Ltd.	Washim	Risod	Kinkheda	Establishment of Custom Hiring Centers (CHC)	165	2021	NA	NA	0	-298	1284.6	905.54
18	Sant Dnyaneshwari Farmer Producer Company Ltd.	Washim	Risod	Kinkheda	Godown	559	2015	8196061	716654	5548978	-463577	Not Received	Not Received
19	Shri. Ramcharandas Baba Farmer Producer Company Ltd.	Washim	Washim	Phalegaon Thet	Establishment of Custom Hiring Centers (CHC)	105	2022	NA	NA	NA	NA	Not Received	Not Received
20	Shri. Ramcharandas Baba Farmer Producer Company Ltd.	Washim	Washim	Phalegaon Thet	Drying Yard	105	2022	NA	NA	NA	NA	Not Received	Not Received
21	Vidarbha Agro Farmer Producer Company Ltd.	Yavatmal	Umarkhed	Sukali	Other Agri business Activity / Geranium Unit	700	2020	0	-543125	1805571	39612	Not Received	Not Received

Annexure-II: SHG Verification during CM-VII Survey





S. N.	District	Taluka	Village	Name of Farmer Group	Activity Name	Remarks	Asset Verification Photographs
1.	Akola	Akola	Kasalikh	Sant Gajanan Maharaj Swayam Sahayata Gat	Godown	Activity has observed in working condition.	 
2.	Akola	Akola	Kanchanpur	Jagdamb Shetkari Utpadak Gat	Custom Hiring Centre (CHC)	Activity has observed in working condition.	 

3.	Akola	Telhara	Atkali	Siya Shetkari Utpadak Gat	Establishment of Custom Hiring Centre (CHC)	Activity has observed in working condition.	 <p>Latitude: 20.9844 Longitude: 75.1544 Altitude: 107.141 m Accuracy: 5.4 m Time: 08/11/2023 10:09 Name: Siya Shetkari SMC Activity: CHC Project Village: Akali Taluk - Taluk 200 2400 - CM in POCRA</p>  <p>Latitude: 20.9844 Longitude: 75.1544 Altitude: 107.141 m Accuracy: 5.4 m Time: 08/11/2023 10:09 Name: Siya Shetkari SMC Activity: CHC Project Village: Akali Taluk - Taluk 200 2400 - CM in POCRA</p>
4.	Jalgaon	Dharangaon	Bilkhede	Bholhai Mata Shetkari Gat	Establishment of Custom Hiring Centre (CHC)	Activity has observed in working condition.	 <p>Latitude: 21.98157 Longitude: 75.20281 Altitude: 181.151 m Accuracy: 10.1 m Time: 08/14/2023 13:39 Name: Cluster Assistant Bholhai Mata Shetkari Gat - Bilkhede Taluk - Dharangaon District</p>  <p>Latitude: 21.98157 Longitude: 75.20281 Altitude: 181.151 m Accuracy: 10.1 m Time: 08/14/2023 14:21 Name: 10000 00000 00000 00000</p>
5.	Jalgaon	Dharangaon	Bilkhede	Krushna Krushi Vidnyan Mandal	Establishment of Custom Hiring Centre (CHC)	Activity has observed in working condition.	 <p>Latitude: 21.98157 Longitude: 75.20281 Altitude: 181.151 m Accuracy: 10.1 m Time: 08/14/2023 14:41 Name: 10000 00000 00000 00000</p>  <p>Latitude: 21.98157 Longitude: 75.20281 Altitude: 181.151 m Accuracy: 10.1 m Time: 08/14/2023 14:41 Name: 10000 00000 00000 00000</p>

6.	Wardha	Samudrapur	Peth	Gruhlaxmi Mahila Bachat Gat	Oil Extraction Unit	Activity has observed in working condition.	 
7.	Wardha	Samudrapur	Peth	Matoshree Gramseva Sangh	Establishment of Custom Hiring Centre (CHC)	Proposal has rejected by DPIU /PD ATMA	
8.	Wardha	Samudrapur	Peth	Janavhi Swayam Sahayata Samuh	Establishment of Custom Hiring Centre (CHC)	Proposal has rejected by DPIU /PD ATMA	 



9.	Wardha	Samudrapur	Peth	Sakshi Swayam Sahayata Samuh	Establishment of Custom Hiring Centre (CHC)	Proposal has rejected by DPIU /PD ATMA	 Latitude: 20.63907 Longitude: 78.11719 Elevation: 353.2410 m Accuracy: 6.2 m Time: 12-09-2023 16:57 Host: CHC-VI Sakshi SHS Meeting Peth: Ta. Samudrapur Dist Wardha	 Latitude: 20.63972 Longitude: 78.11744 Elevation: 353.2410 m Accuracy: 10.0 m Time: 12-09-2023 16:57 Host: CHC-VI Sakshi SHS Meeting Peth: Ta. Samudrapur Dist Wardha
10.	Wardha	Samudrapur	Peth	Damini Swayam Sahayata Samuh	Establishment of Custom Hiring Centre (CHC)	Proposal has rejected by DPIU /PD ATMA	 Latitude: 20.639162 Longitude: 78.11653 Elevation: 353.2410 m Accuracy: 6.0 m Time: 12-09-2023 17:28 Host: CHC-VI Checksite Damini SHS Meeting Peth: Ta. Samudrapur Dist Wardha	 Latitude: 20.639148 Longitude: 78.11756 Elevation: 353.2410 m Accuracy: 98.2 m Time: 12-09-2023 17:28 Host: CHC-VI Checksite Damini SHS Meeting Peth: Ta. Samudrapur Dist Wardha
11.	Wardha	Samudrapur	Peth	Matoshree Gramseva Sangh	Other Agribusiness Activity PAPAD UDYOG	Activity has observed in working condition.	 Latitude: 20.639031 Longitude: 78.11746 Elevation: 353.2410 m Accuracy: 10.0 m Time: 12-09-2023 18:05 Host: CHC-VI Checksite Matoshree Gramseva SHS Meeting Peth: Ta. Samudrapur Dist Wardha	 Latitude: 20.639415 Longitude: 78.11803 Elevation: 353.2410 m Accuracy: 20.0 m Time: 12-09-2023 18:09 Host: CHC-VI ID 15433511 Kali D. Dahanu Matoshree Gramseva SHS Meeting Peth: Ta. Samudrapur Dist Wardha





12.	Washim	Malegaon Washim	Malegaon NajikKinihi	Jay HoBalirajaShetakriBachat Gat	Establishment of Custom Hiring Centre (CHC)	Activity has observed in working condition.		
13.	Washim	Malegaon Washim	Malegaon NajikKinihi	Tathagat Krushi Shetakri Bachat Gat	Establishment of Custom Hiring Centre (CHC)	Proposal has rejected by DPIU /PD ATMA		
14.	Washim	Risod	Loni Kh.	Mauli Shetkari Bachat Gat	Establishment of Custom Hiring Centre (CHC)	Activity has observed in working condition.		

15.	Washim	Risod	Loni Kh.	Mauli Swayam Sahayata Samuh	Establishment of Custom Hiring Centre (CHC)	Proposal has rejected by DPIU /PD ATMA	 
16.	Washim	Risod	Loni Kh.	Mauli Shetkari Bachat Gat	Establishment of Custom Hiring Centre (CHC)	Activity has observed in working condition.	 







Annexure-III: Verification of Agri-Business Assets in CM-VII Survey







Sr. No.	FPC Name	District	Taluka	Village	Activity	Remarks	Asset Verification Photographs
1	Krushibeej Farmer Producer Company Ltd.	Akola	Barshitakali	Kanheri	Construction of Godown/ Small Warehouse	Activity has observed in working condition.	 <p>Left Photo Metadata: Latitude: 20.634856 Longitude: 77.054099 Elevation: 194.06+100 m Accuracy: 52.8 m Time: 02-09-2023 09:04 Note: Godown Asset verification Krushibeej FPC Kanheri Taluka Akola</p> <p>Right Photo Metadata: Latitude: 20.634856 Longitude: 77.054099 Elevation: 194.06+100 m Accuracy: 52.8 m Time: 02-09-2023 09:04 Note: Asset verification Krushibeej FPC Kanheri Taluka Akola CM-VII POCRA</p>
2	Kapshi Farmer Producer Company Ltd.	Akola	Akola	Kapshi	Refrigerated Van or Vegetable/Fruit carrier/ vehicle	Activity has observed in working condition.	 <p>Left Photo Metadata: Latitude: 20.567046 Longitude: 76.954603 Elevation: 314.25452 m Accuracy: 12.7 m Time: 08-24-2023 16:16 Note: Asset verification Kapshi - Akola District Akola कशी फार्मर प्रोड्यूसर कंपनी, अकोला CM-VII POCRA</p> <p>Right Photo Metadata: Latitude: 20.567019 Longitude: 76.959515 Elevation: 314.0348 m Accuracy: 12.8 m Time: 08-24-2023 16:16 Note: Captain Ambassador Character FPC - Director Id-11102734032 Activity- Sharda Natta vehicle Kapshi Agri business CM-VII POCRA</p>

3	Krushivigyan Madhuratna Farmer Producer Company Ltd.	Akola	Barshitakali	Kanheri	Food Processing Unit	Activity has observed in working condition.	
4	Murtizapur Shetkari Producer Company Ltd.	Akola	Murtizapur	Bhagora	Establishment of Custom Hiring Centre (CHC)	Activity has observed in working condition.	


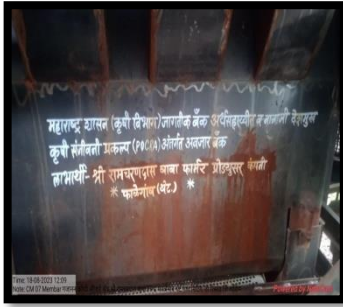

5	Dattatray Farmer Producer Company Ltd.	Amravati	Morshi	Ashtagaon	Establishment of Custom Hiring Centre (CHC)	Activity has observed in working condition.	 <p>Latitude: 21.383345 Longitude: 77.822618 Elevation: 362.8624 m Accuracy: 16.1 m Time: 26-09-2023 15:20 Note: CHC Checker: POCRA Farmer Producer Company Ltd. Morshi, Amravati Powered by GeoCam</p>	 <p>Latitude: 21.383345 Longitude: 77.822618 Elevation: 362.8624 m Accuracy: 16.1 m Time: 26-09-2023 15:22 Note: CHC Checker: POCRA Farmer Producer Company Ltd. Morshi, Amravati Powered by GeoCam</p>
6	Samruddha Melghat Farmer Producer Company Ltd.	Amravati	Chikhaldara	Chinchkheda	Establishment of Custom Hiring Centre (CHC)	Activity has observed in working condition.	 <p>Latitude: 21.34211 Longitude: 77.27485 Elevation: 200.0 m Accuracy: 20.0 m Time: 26-09-2023 15:06 Note: CHC Checker: POCRA Farmer Producer Company Ltd. Chikhaldara, Amravati Powered by GeoCam</p>	 <p>Latitude: 21.34211 Longitude: 77.27485 Elevation: 200.0 m Accuracy: 20.0 m Time: 26-09-2023 14:25 Note: CHC Checker: POCRA Farmer Producer Company Ltd. Chikhaldara, Amravati Powered by GeoCam</p>



7	Ganorkar Aroma Farmer Producer Company Ltd.	Amravati	Warud	Shendurjanagh at	Medicinal/Aromatic Plants Processing Unit	Activity has observed in working condition.		
8	Krushisanklap Farmer Producer Company Ltd.	Buldhana	Buldhana	Malwandi	Construction of Godown/ Small Warehouse	Activity has observed in working condition.		
9	Rudrajay Agrotech Farmer Producer Company Ltd.	Buldana	Buldana	Moudhala	Establishment of Custom Hiring Centre (CHC)	Activity has observed in working condition.		

10	Swami Samarth Farmer Producer Company Ltd	Buldana	Mehkar	Janephal	Establishment of Custom Hiring Centre (CHC)	Activity has observed in working condition.	   
11	Vidarbha Samruddhi Krushi Producer Company Ltd.	Buldana	Sindkhed	Warwand	Construction of Godown/ Small Warehouse	Activity has observed in working condition.	 

12	Rozodak Farmers Producer Company Pvt. Ltd.	Jalgaon	Raver	Rozoda	Turmeric Processing Unit	Activity has observed in working condition.	 
13	Parnanetra Farmers Producer Company Ltd.	Wardha	Ashti	Talegaon Shyamjipant	Pulse Mill	Activity has observed in working condition.	 
14	Prasad Farmer Producer Company Ltd.	Washim	Risod	Kinkheda	Construction of Godown/ Small Warehouse	Activity has observed in working condition.	 

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18	Sant Dnyaneshwar Farmer Producer Company Ltd,	Washim	Risod	Kinkheda	Construction of Godown/ Small Warehouse	Activity has observed in working condition.	 
19	Shri. Ramcharandas Baba Farmer Producer Company Ltd.	Washim	Washim	Phalegaon Thet	Establishment of Custom Hiring Centre (CHC)	Activity has observed in working condition.	 
20	Shri. Ramcharandas Baba Farmer Producer Company Ltd.	Washim	Washim	Phalegaon Thet	Drying Yard	Activity has observed in working condition.	 

21	Vidarbha Agro Farmer Producer Company Ltd.	Yavatmal	Umarkhed	Sukali	Other Agri Business Activity / Geranium Unit	Activity has observed in working condition.	 
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