

Concurrent Monitoring Report- Round V October 2021 to March 2022

Monitoring & Evaluation (M&E) for Project on Climate Resilient Agriculture (PoCRA)



Nanaji Deshmukh Krushi Sanjeevani Prakalp

(Project of Government of Maharashtra in Partnership with the World Bank)



NABARD Consultancy Services Pvt. Ltd.

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*Monitoring & Evaluation (M&E) for
Project on Climate Resilient Agriculture (PoCRA) in Rest of
Project Area Maharashtra*

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(Project of Government of Maharashtra in Partnership with the World Bank)

**PREPARED BY
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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 |
| FGDs | Focus Group Discussions |
| 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 | Krusha 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 |

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## Executive Summary

### *I. Concurrent Monitoring*

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

### *II. Sampling Methodology*

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

For the selected project villages, lists of individual beneficiaries, community beneficiaries, farmer field school participants, FPC & SHGs was obtained from the PMU. The corresponding list for the control villages were obtained by the field team by visiting the villages and enquiring with the concerned officials or from their records. For round V, a sample of 207 beneficiaries (143 beneficiaries who had received subsidy and 64 beneficiaries who had received pre-sanction) was selected from the project villages by applying appropriate sampling method in the control villages.

Key Informant Interviews (KIIs) were conducted (with Krushi Tai, Agriculture and Cluster Assistants and other senior government officials from Department of Agriculture) in project villages 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 of monitoring for the concurrent surveys.

The sample coverage of beneficiaries in Project villages included as follows: 64 samples from DBT-Pre-sanction, 143 from DBT-Subsidy released, 96 from Guest farmers, 32 from Host farmers, 50 samples of NRM/ Community Farm Pond, 32 SHG, and 53 FPO, total of 480.

In 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 240 beneficiaries were covered from the Control villages with a ratio of 2:1 in the project and control areas.

### *III. Findings from CM-V Survey*

#### *Component A: Promoting Climate Resilient Agriculture Systems*

Climate Resilience in agricultural production systems was the main component under the project. The objective was to strengthen adaptive capacity of farmers through interventions at farm level, complemented by interventions for increasing access to irrigation. As part of CM-V, data were collected on relevant parameters under this component and activities.

### **A1: Participatory Development of Mini Watershed Plans**

#### **Satisfaction and Awareness of Project & Micro Planning**

As per CM-IV Survey we had already concluded that 97.5% people were aware of PoCRA project. Now as a part of the CM-V Survey, beneficiaries were asked about their satisfaction levels on various aspects of the project which are indicated below.

#### **Process for accessing the project benefits**

When questioned about the satisfaction level on the process for accessing the project benefits, 70% beneficiaries told that they were very satisfied and only 3% reported that they were not aware or involved in the project.

#### **Work of VCRMC**

With reference to the satisfaction on the work of VCRMC, 70% of the beneficiaries were satisfied and 11% respondents were very unsatisfied with the work of VCRMC and about 4% respondents were not aware or involved with the project. The reason for unsatisfaction are the 4% respondents were having the least interactions with the VCRMC members & hence it leads to the unawareness of the project.

#### **Support provided by the project staff in application process**

With reference to the satisfaction on the support provided by the project staff in the application process and availing the benefits from the project, about 68% respondents were satisfied and 12% were unsatisfied and 3% were not aware or involved with it. Challenges existed in the implementation of individual activities, including spot verifications, shortfall in documents and financial limitations, which needed to be taken into consideration.

#### **Knowledge of FFS Facilitator**

Regarding satisfaction with the knowledge of Farmer Field School facilitator, who took the technology demonstration sessions in the Farmer Field School; 63% of the respondents were satisfied, 11% were very unsatisfied and 8% of the respondents were not aware or involved with FFS activities. This indicated that majority of farmers are taking interest in the FFS and enhancement of their knowledge.

#### **Work performance of Krushi Tai**

Regarding satisfaction with the work performance and support received from Krushi Tai, 67% respondents reported satisfaction with the work performance and support from Krushi Tai,



while 7% respondents were not aware about functioning of Krushi Tai. It was also observed in the survey that regular performance of Krushi Tai's conducted and their evaluation format was considered as sufficient. The total 30 KT's were interacted. Out of total respondents 7% were not aware about the functioning of KT and the reason for the less involvement of Krushi Tai's in the project working have been observed as no-issuing of remunerations

## A2: Promoting Climate Resilient Agricultural Systems

**Landholding pattern:** It was observed that 6 percent (30 out of 480 households) of beneficiaries in Project and 5 percent (11 out of 240 households) in Control villages were landless, while 21 percent (103HH) from Project and 20 percent (49HH) from Control villages were Marginal household, 37 percent (176HH) from Project and 42 percent (100HH) from Control villages were Small household. About 34 percent (163HH) from Project and 33 percent (79HH) from Control villages were household having Medium Landholding. Households with more than 10 ha of land were recorded to be only 1.7 percent (8HH) from Project Villages and 0.4 (1HH) percent in Control villages.

**Cropping pattern:** In *Kharif* season, Cotton cultivation occupied highest average in Project villages as it was preferred by 54 percent of beneficiaries, while it was only 44 percent in Control villages. But Soybean was more preferred in the Control Villages as it was reported by 63 percent of beneficiaries, while in Project villages the response was only 53 percent. Pigeon Pea occupied the third position with 27 percent beneficiaries in Project Villages and 19 percent in the Control villages. The pulse crops Green gram and Black gram had very low preference in these villages with 1.4 percent from Project beneficiaries were preferred Green gram and 0.9 percent reported that they had grown Black gram. Similarly, 1.3 percent beneficiaries from the Control villages were preferred green gram and 0.4 percent preferred Black gram.

**Area, Production and Yield:** Yield of major crops were being reported as Soybean (P:7.04, C:6.92 q/acre), Cotton (P:6.78, C:6.92 q/acre), Pigeon pea (P:8.50, C: 5.89 q/acre) whereas Chickpea (P: 6.70, C: 6.31 q/acre) in project and control villages.

## Activities for Climate Resilient Agriculture Systems

It was found that in project villages, major activity was Guest farmers with 28.7% beneficiaries, followed by drip irrigation with 21.5% beneficiaries (in CM-IV it was 18.2%), Sprinkler Irrigation 21.5% (while in CM-IV it was 13.1%), 9.6% Host farmers and 35% for Seed Production (it was 7.8% in CM-IV Survey). We observed an increase in interest in adoption of CR technologies offered by PoCRA in CM-V Survey.

## Comparative Trend Analysis from CM-IV Survey

It was found that farmers have started adopting micro-irrigation methods like Sprinkler and Drip to save sufficient water to irrigate additional areas. There was an increase in trend to

adopt horticultural plantation in CM-V as compared to CM-IV. This was a positive trend in adopting climate resilience technology.

### **Adoption of Climate Resilient Technologies**

It was found that project beneficiaries have adopted various CR technologies since the inception of the project. It was observed that use of improved seed varieties had gained popularity in both project and control villages, 45% Adoption was observed in Project areas in CM-V survey, while it was 38% in CM-IV Survey. Similarly, intercropping was adopted by 25% project beneficiaries in CM-V survey, while it was 44.3% in CM-IV Survey in Project villages. Likewise, 25% higher adoption of treated seeds is observed in the Project villages in CM-V survey, while it was 38% in CM-IV Survey. Further Contour cultivation was adopted by 11% by beneficiaries in Project villages, and IPM adoption was 8% in Project Villages, giving much needed boost to adopt Climate Resilient Agriculture

### **Adoption of BBF Technology**

The adoption of BBF technology gained popularity during the *Kharif* season, for its usefulness. In case of excessive rainfall, 47 percent beneficiaries from Project villages accepted that it helped in the drainage of excess water from the field and 35 percent beneficiaries reported that it helped in avoiding water stagnation in the field, while 53 percent beneficiaries reported that that it saved the seed from being washing away, while 12 percent beneficiaries reported that it help in increasing the yield. This indicates that there was good awareness has regarding the adoption of BBF technology in project area which had helped farmer in effective drainage during high intensity rainfall.

### **Findings on Farmers' Field School (FFS)**

Cotton being major *Kharif* crop in this region, so 40 percent FFS were demonstrated on cotton crop conducted in Project Villages, it was followed by Soybean which covered 26 percent. FFS were demonstrated conducted on Intercropping of Soybean with Pigeon Pea which occupied 9 percent in Project villages.

### **Supporting farmers through DBT**

#### **Seed Production**

It was observed that Soybean was the most preferred crop for seed production in both Project (88%) and Control villages (67%), It was followed by Pigeon pea figuring 13 percent from Project and nil from the Control villages.

#### **Horticultural Plantation**

During the CM-V survey, It was observed that 82 percent respondents had planted Orange followed by Guava and Custard apple in Project villages.

### **A3: Promoting efficient and sustainable use of water for agriculture**

#### **Support through DBT for Water Security**

##### **Drip Irrigation**

In CM-V survey its revealed that, majority of total DBT beneficiaries from Project villages preferred drip Irrigation system (35%),.. which was just double from CM-IV Survey report. They mostly used it only on occasionally, while few used it throughout the cropping season. The share of FFS demonstrated for inter cropping of soyabean, Pigeon pea in the project area was 9 percent.

##### **Sprinkler Irrigation**

This activity ranked second in CM-V, with adoption rate of 28 percent from Project villages. As per data shared by PMU there was increase of about 15 percent from CM-IV Survey. As per the survey 3.35 ha of land being irrigated with this system. During the survey it was observed that many farmers had availed the facility but were not using it in the field.

##### **Pipes (HDPE/PVC)**

As per Survey data, 92 percent beneficiaries from Project villages and 67 percent from Control villages had received PVC pipes, while HDPE pipes were received by 8 percent beneficiaries from Project villages and 33 percent from Control villages.

#### **Status of Community based Soil & Water Conservation Activities**

Total 50 beneficiaries were covered in project villages and 25 beneficiaries in control villages as part of CM-V. Compartment or Graded Bunding activity was taken up in 40 sample locations in the project villages and 3 locations in the Control villages, while construction of Cemented *Nala* bund was taken up in 10 locations in the project villages and none in Control villages. Both these activities works were completed in the year of 2021-22.

### **Component B: Post-harvest Management and Value Chain Promotion**

#### **Findings on FPCs Supported by PoCRA**

In CM-V Survey, covered 21 FPCs, out of which 13 FPCs had adopted Custom Hiring Centres (CHC), four had established Seed processing, Cleaning & grading units, two had Oil extraction units, one each had Godown and agri-Input business. Out of total 21 FPCs, 07 FPCs were registered during the year 2021 and remaining FPCs were registered in the year of 2021. Also 1 FPC is under construction. All these 21 FPC's have received knowledge and technical support through MACP, ATMA and PoCRA.

### **Current Activities by FPC**

The main activity of the FPC at the time of survey was aggregation of produce (47%), 27 percent do value addition to agriculture produce by sorting and grading and 13 percent provided access to market for the produce. About 27 percent provided agricultural inputs like seeds and fertilizers to the farmers and 11 percent FPCs from Project villages also provided training to the farmers on best agricultural practices.

Out of total 21 FPCs supported by the project, audited reports from 10 FPCs showed that they had started earning profits, while 05 FPCs had suffered losses and 05 FPCs had recorded no profit/loss in FY 2021-22. The profit earning by 10 FPC's could be attributed to the efforts made by the PoCRA project for training and capacity building of FPCs and support.

### **Findings on SHGs Supported by PoCRA**

Apart from FPCs, the project also focused on SHGs. We had surveyed total 16 SHGs in Project and 8 from Control Villages. It was observed that out of the total SHGs surveyed in Project villages, 69 percent had both male and female members, 13 percent had only male members and 19 percent were operated solely by female members. They all were mostly involved in CHC activities. SHG can bring banking habits among the community, it may also pay way for JLGs – where a few innovative and enterprising individuals jointly invest and operate a business. Further, federated SHGs may lead to formation of FPOs.

### ***Component C: Institutional Development, Knowledge and Policies***

#### **Agro-met advisory services**

Almost 50 percent respondents from Project wanted agro-met advisories for 3 times a week, 33 percent needed daily forecast. While 13 percent needed the services atleast once a week. This indicated the digital awareness among Project beneficiaries for risk management and income enhancement. It was observed that approximately 50% of the VCRMC members had attended the capacity building training provided under the project. The topic for capacity building were VCRMC members on roles & responsibility, project guidelines & the activities. However, newly formed VCRMCs in phase-II and III clusters had not attended the training and were therefore unaware of the project guidelines and activities. Initially, VCRMC members attended the training through online streaming, which helped raise awareness among the members. VCRMC members had appreciated the project work & had received good experience of implementation. Provisions for financial arrangement to the farmers in case of individual activity was suggested by the VCRMC members. Timely release of subsidy to the farmers account need to be ensured.

VCRMC members followed social and environmental safeguards in project activities and asset were purchased according to guidelines. Under Environmental Safeguards, as part of Environmental Management Framework included the Integration of EMF checklist into the Micro-Level Planning Mobile Application; Incorporation of IPNM into the Farmer Field School activity; Environmental Checklist incorporated into the Agri-Business proposals for DBT; and Training and capacity building programs incorporating environmental safeguards as envisaged in the project while implementing the in p The project activities and while physical assets were purchased/ undertaking physical construction activity. The key strategies, under social safeguards, as part of Social Management Framework (SMF) and Tribal People Planning Framework (TPPF) and Gender Action Plan (GAP) included (i) Social and Tribal Inclusion; (ii) Participation and Ownership; (iii) Transparency and Accountability and (iv) Grievance Redressal, were followed during asset purchase.

#### IV. RFID Indicators for CM-V

##### PDO Level Indicators

| S No<br>(as<br>per<br>PAD) | Indicat<br>or(s)                                                                                                                                                  | Definition                                                                                                                                  | Methodology                                                                                                                                                                                                                                                                                                                                                                                                  | Frequen<br>cy of<br>Measur<br>ement | CM-V Value<br>(till 31 <sup>st</sup> March 2022)                                                                                                                                                                                                                                                                         |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5                          | <b>Direct project beneficiaries : number of farmers reached with agricultural assets of services</b><br><i>Number of farmers reached with agricultural assets</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"> <li>The list of total beneficiaries under the project in Rest of Project area was taken from the MIS data till March 31, 2021</li> <li>For DBT beneficiaries, FFS beneficiaries (HF &amp; GF), Training/Exposure visits, online training and workshop conducted</li> <li>Out of this, total female beneficiaries are filtered and % was calculated accordingly</li> </ul> | Semi Annual                         | <b>Overall: 9,59,056 (Females-19%)</b> <ul style="list-style-type: none"> <li>Total DBT Farmers: 91,753 (Females-21%)</li> <li>Total Host Farmers: 6,993 (Females- 13%)</li> <li>Total Guest Farmers: 2,44,628 (Females-17%)</li> <li>Total Participants in trainings/exposure visits: 6,15,682 (Females-20%)</li> </ul> |

| S No<br>(as per PAD) | Indicator(s)              | Definition | Methodology | Frequency of Measurement | CM-V Value<br>(till 31 <sup>st</sup> March 2022) |
|----------------------|---------------------------|------------|-------------|--------------------------|--------------------------------------------------|
|                      | or services (% of female) |            |             |                          |                                                  |

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

| No | Indicator(s)                                                                                                                  | Definition                                                                                                                                                | Methodology                                                                                                                                                                                                                                                                                                                                                                                                                                                | Frequency of Measurement | CM-V Value<br>(till 31 <sup>st</sup> March 2022)                                                                                                                                                                                                                                                                       |
|----|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6  | <b>Farmers adopting improved agricultural technology</b><br><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"> <li>The calculations are done from the primary data captured through beneficiary questionnaire in Project &amp; Control Villages</li> <li>Adoption of at least one of the improved agriculture technology was considered based on the technologies asked in the Beneficiary questionnaire</li> <li>Total of the technology adopted was calculated and % calculated with overall total beneficiaries surveyed</li> </ul> | Annual                   | <b>P-61%, C-51%</b><br><i>(These results are based on field survey in 32 project &amp; 16 control villages)</i>                                                                                                                                                                                                        |
| 7  | <b>Improved water-use efficiency at farm level</b><br><i>Area provided with new/impr</i>                                      | <i>This indicator measures in ha the total area of land provided by the project</i>                                                                       | <ul style="list-style-type: none"> <li>The list of Activity under Improved water-use efficiency (Sprinkler, Drip, Pipes, Water Pumps, Farm Ponds, Wells &amp; Recharge Structures) activity under the project</li> </ul>                                                                                                                                                                                                                                   | Annual                   | <b>Total Area- 1,25,903 ha</b> <ul style="list-style-type: none"> <li>Area under Sprinkler: 42568 ha</li> <li>Area under Drip: 64939 ha</li> <li>Area under Water pump &amp; sprinkler: 428 ha</li> <li>Area under Pipes: 8195 ha</li> <li>Area under pumps: 9011 ha</li> <li>Area under farm ponds: 389 ha</li> </ul> |



|   |                                                                                                                                                                   |                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                  |             |                                                                                                                                                                                                                                                            |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | oved<br>irrigation<br>or<br>drainage<br>services<br>(in ha)                                                                                                       | with new or<br>improved<br>irrigation or<br>drainage<br>services                                                              | <p>was taken from the MIS data till March 31, 2022.</p> <ul style="list-style-type: none"> <li>For Sprinkler &amp; Drip Irrigation, the maximum area mentioned under the activity was taken</li> <li>For Pipes, Water Pumps, Farm Ponds &amp; Well Recharge, an area of 1ha had been assumed</li> <li>Total area under all the above activities mentioned was calculated.</li> </ul>                                             |             | <ul style="list-style-type: none"> <li>Area under well &amp; recharge structure: 373 ha</li> </ul>                                                                                                                                                         |
| 8 | <b>Improved availability of surface water for agriculture</b><br><br>Surface water storage capacity from new farm Land community ponds (in 1,000 m <sup>3</sup> ) | <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"> <li>The list of individual new farm ponds constructed under the PoCRA project was taken from the MIS data until March 31, 2022.</li> <li>Volume for total 326 farm ponds &amp; 63 community farm ponds was calculated individually as per the standard guidelines under PoCRA</li> <li>Total volume was taken as the Storage Capacity under new &amp; community farm ponds created</li> </ul> | Semi Annual | <b>Total Storage Capacity under new &amp; community farm ponds: 915.17 (1000 m<sup>3</sup>)</b><br><br>Storage Capacity under New Farm Ponds: 524.17 (1000 m <sup>3</sup> )<br><br>Storage Capacity under Community Farm Ponds: 391 (1000 m <sup>3</sup> ) |
| 9 | <b>Enhanced Soil Health at Farm Level</b><br><br>Area with GAPs for improved management of saline and sodic                                                       | <i>This indicator tracks the farm production area in ha where Good Agricultural Practices</i>                                 | <ul style="list-style-type: none"> <li>The list of saline &amp; sodic activities under the PoCRA project was taken from the MIS data till March 31, 2022.</li> <li>In Saline &amp; Sodic villages, GAPs are taken as FFS Conducted, Drip, Sprinkler,</li> </ul>                                                                                                                                                                  | Semi Annual | <b>48,114.96 ha</b>                                                                                                                                                                                                                                        |

|  |               |                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                         |  |  |
|--|---------------|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
|  | soils (in ha) | (GAP) are applied by farmers for improving management of saline and sodic soils in project villages | <p>Farm Ponds &amp; Water Pumps</p> <ul style="list-style-type: none"> <li>For Sprinkler &amp; Drip Irrigation, the maximum area mentioned under the activity was taken</li> <li>For Pipes, Water Pumps, an area of 1ha had been assumed</li> <li>Total area covered under the above activities was taken as the GAPs adopted in Saline &amp; Sodic Villages</li> </ul> |  |  |
|--|---------------|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|

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

| No | Indicator (s)                                                                                                                                                                                                      | Definition                                                                                                                                                           | Methodology                                                                                                                                                                                                                                                                                                                                                                                                                                        | Frequency of Measurement | CM-V Value (till 31 <sup>st</sup> March 2022)                                                                                                                                                                                 |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10 | <b>Seeds supply: Promotion of climate resilient crop varieties</b><br><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"> <li>The calculations are done from the primary data captured through beneficiary questionnaire in Project &amp; Control Villages</li> <li>Area under Climate Resilient Variety for three major crops (Chickpea, Pigeon pea &amp; Soybean) was determined from total responses</li> <li>Total area under the three crop was taken</li> <li>% was calculated by dividing (Area under Climate Resilient</li> </ul> | Annual                   | <p>Overall<br/>P- 81%, C- 81%</p> <p>Soybean<br/>P-82%, C-83%</p> <p>Chickpea<br/>P-82%, C-82%</p> <p>Pigeon pea<br/>P-70%, C-60%</p> <p>(These results are based on field survey in 32 project &amp; 16 control village)</p> |

|    |                                                                          |                                                                                                               | Variety/Total Area under the three Crop)                                                                                                                                                                                                                                         |             |                                                                                                                                   |
|----|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------|
| 11 | <b>Number of project supported FPCs with growth in annual profits</b>    | This indicator reports the number of project-supported Farmer Producer Companies with growth in annual profit | <ul style="list-style-type: none"> <li>List of FPCs for CM-V was taken from PMU</li> <li>Audited Financial Statements of the FPCs was obtained during the survey</li> <li>Number of PoCRA supported FPCs reporting profit are taken</li> </ul>                                   | Annual      | Out of total 21 FPCs 10 FPCs showed profits, while 05 FPCs had suffered loss and 05 FPCs recorded no profit/loss in FY 2021-22.   |
| 14 | <b>Number of approved participatory mini watershed plans implemented</b> | This indicator reports the number of approved participatory mini watershed plans implemented                  | <ul style="list-style-type: none"> <li>The list of CDPs &amp; VDPs approved under the PoCRA project in Rest of Project area was taken from the MIS data till March 31, 2022.</li> <li>The data was taken for Phase-I villages where Micro-planning had been completed</li> </ul> | Semi Annual | In 687 villages microplanning were conducted and village development plan (VDP) was prepared duly approved by district committee. |

## 1. Project Overview

### 1.1. Project Background

Agriculture was the major occupation of the people in Maharashtra. The share of agriculture and allied activities in the total Gross State Value Added (GSVA) was 11.7 percent<sup>1</sup>. Even though it shows a decreasing trend, a large population, especially in the rural areas was dependent on the sector for their livelihoods<sup>2</sup>. 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 was observed in the state once every 5 years. In Maharashtra, growth in the sector fluctuates heavily and was depending on highly erratic rainfall during any particular year and rainfall variability over time. The distribution of rainfall was 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 percent 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 was 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 was 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, pigeon peas and chickpeas. According to Ministry of

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<sup>1</sup> Economic Survey (ES), 2020-21

<sup>2</sup> 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 percent of the total number of operational holdings. (Source: ES, 2020-21)

Agriculture, cultivation of BT cotton in the region had added to the crisis, since the variety was sensitive to the water shortages.

This had 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 had 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. had 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 was 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 was 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.



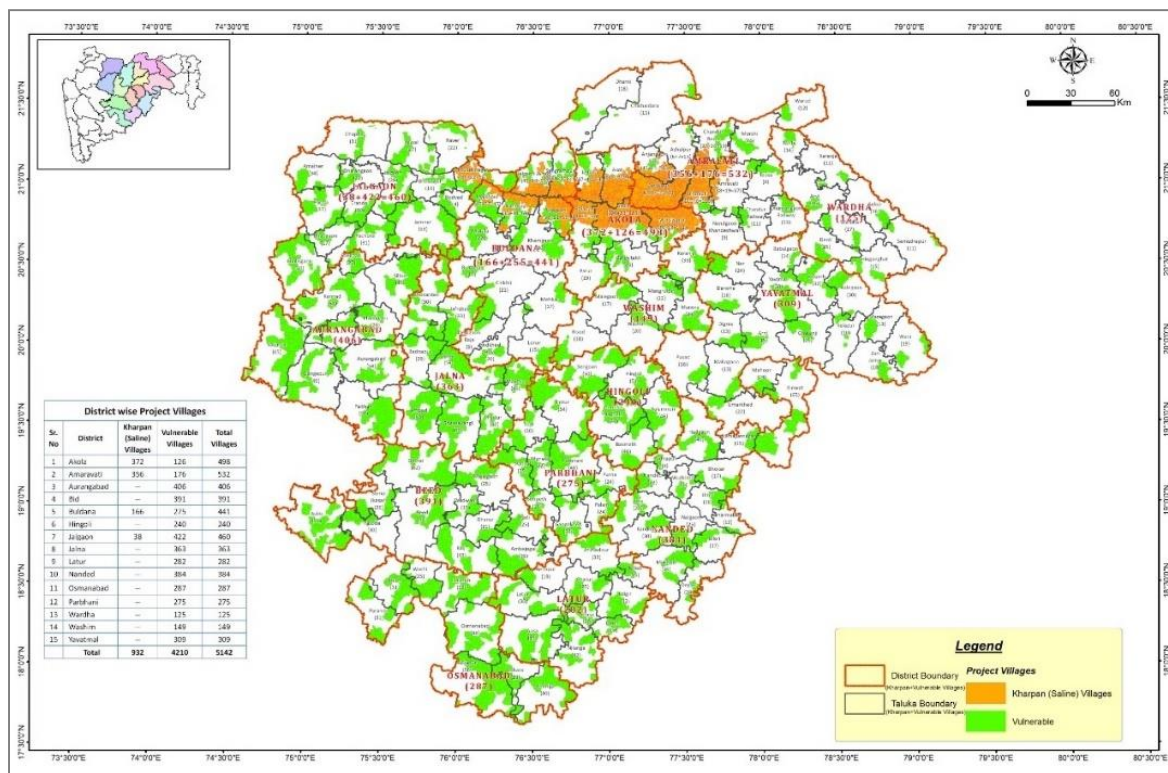


Figure 1: PoCRA Project Area

## 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-V 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)

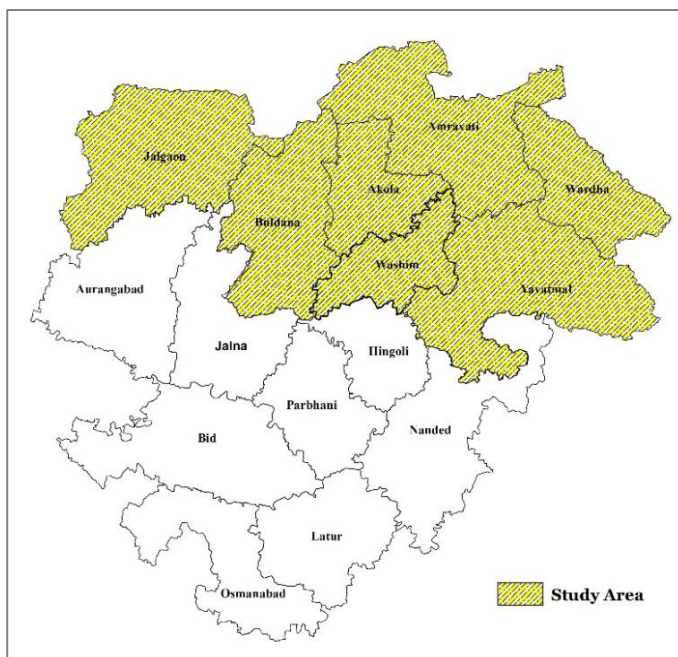


Figure 2: Study Area

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 had 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.

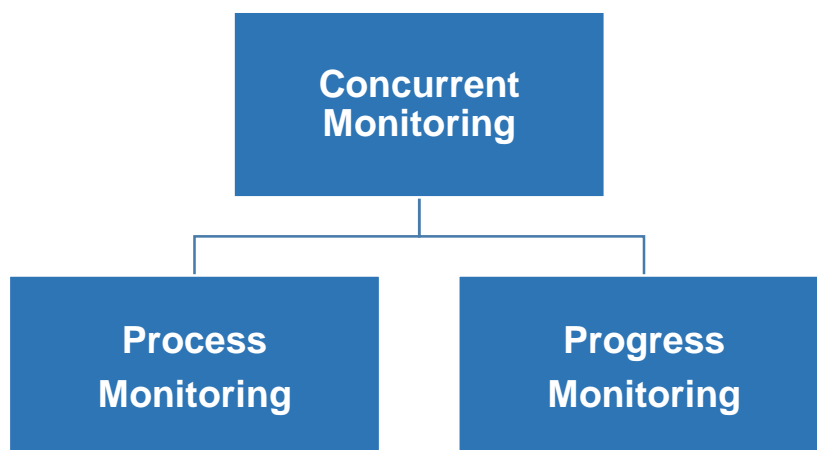
The main objective of concurrent monitoring is the regular collection and reporting of information to track whether actual results are being achieved as planned. Concurrent Monitoring focuses on systematic and continuous collection and analysis of data for measuring process and progress of the project.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

Purpose of Concurrent Monitoring:

- Providing PMU staff and other stakeholders with information on the progress being made towards intended outputs and outcomes (RFID indicators)
- Providing information that enables approaches and strategies to be changed in response to evolving situations
- Identifying whether there was a need to change goals, objectives, plans or budgets over time
- Identifying the need for further information or research required if any
- Providing information that enhances ongoing learning, both within and outside the project

### 2.2. Monitoring Framework

A mixed methods approach was used collecting both quantitative and qualitative data for process and progress monitoring as part of CM-V 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 was 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).

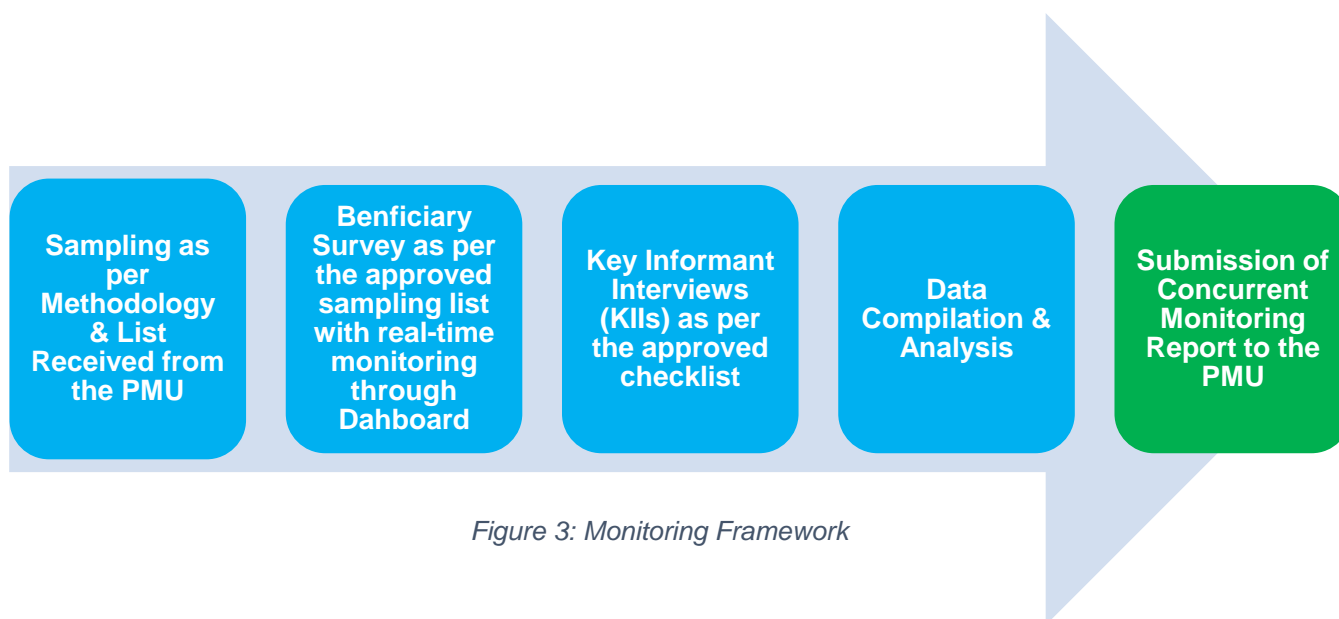


Figure 3: Monitoring Framework

### 2.3. Sampling Methodology

As per the ToR (Table below), the Concurrent Monitoring (CM) was conducted on a sample of 32 clusters. For this purpose, all the 320 project clusters were arranged district-wise and, within district, Taluka-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- V.

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                                |
| <b>Total</b>                   | <b>320</b>                                                 | <b>320</b>                                                  | <b>160</b>                        |

For the control group, 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-V, 32 villages from project area and 16 villages from control area. Two villages have selected from the same cluster for covering NRM sample with prior permission from PMU.

## 2.4. 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 field team obtained the corresponding list for the control villages by visiting the villages and enquiring with concerned officials or from their records.

- Beneficiaries under the POCRA project upto 31<sup>st</sup> March, 2022 were the target group for CM-V.
- The list of individual DBT beneficiaries along with the benefits received (Pre sanctioned received & paid separately), Farmer Field School (FFS) participants (Host and Guest farmers) was obtained from the PMU.

For, the two lists (pre-sanction and subsidy paid) were merged and sorted by village and duplicate names were discarded. In the next step, 143 DBT beneficiaries who received subsidy and 64 DBT beneficiaries who received Pre-sanction were selected systematically

after sorting the lists by type of benefit. Regarding Farmer Field School, the sample was 1 Host farmer and 3 Guest farmers (including 1 women) from each selected village.

In addition, wherever Farmer producer companies (FPCs) and SHGs were present, 3 FPC members including the director and 2 SHG members were selected. Furthermore, NRM work undertaken in 5 villages were selected and from each village a sample of 10 beneficiaries were selected.

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

*Table 2: Sample Size Selected for CM-V*

| <b>Beneficiary Type</b>                     | <b>Sample Size (considered till 31.03.22)</b> |
|---------------------------------------------|-----------------------------------------------|
| <b>I. Individual Activity</b>               | <b>335</b>                                    |
| <b>1. DBT</b>                               | <b>207</b>                                    |
| a. Subsidy Disbursed                        | 143                                           |
| b. Pre Sanctioned Received (2 per village)  | 64                                            |
| <b>2. FFS</b>                               | <b>128</b>                                    |
| a. Host Farmers (1 per village)             | 32                                            |
| b. Guest Farmers (female) (1 per village)   | 32                                            |
| c. Guest Farmers (male) (2 per village)     | 64                                            |
| <b>II. Community Activity</b>               | <b>145</b>                                    |
| 1. NRM Works (10 per village in 5 Villages) | 50                                            |
| 2. FPCs (Director + 2 members)              | 63                                            |
| 3. SHG members ( Chairman + 3 members)      | 32                                            |
| <b>Total</b>                                | <b>480</b>                                    |

### 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 was 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.

## 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)                                     | Sample Size                                                                                 | Sampling Tool                             |
|------|----------------------------------------------------------|---------------------------------------------------------------------------------------------|-------------------------------------------|
| 1    | Direct Beneficiary Transfer/<br>Individual Beneficiaries | 207 Total (64 pre sanctioned received & 143 subsidy paid) as per the list obtained from PMU | Beneficiary Questionnaire                 |
| 2    | FFS (Host & Guest Farmers)                               | 1 Host farmer per village<br>3 Guest Farmers per village<br>(2 Male & 1 Female)             | Beneficiary Questionnaire                 |
| 3    | NRM Work                                                 | 10 per village                                                                              | Beneficiary Questionnaire                 |
| 5    | FIG /SHG/FPC                                             | 3 per FPC including director & 2 per SHG including president                                | Beneficiary Questionnaire & KII Checklist |
| 6    | FGDs with VCRMC                                          | 1 per selected village                                                                      | Key Informant Interview (KII) Checklist   |
| 7    | Krushi Tai                                               | 1 per selected village                                                                      | Key Informant Interview (KII) Checklist   |
| 8    | FFS Facilitators/<br>Coordinators                        | 1 per cluster                                                                               | Key Informant Interview (KII) Checklist   |
| 9    | Agriculture Assistant/Cluster Assistant/Agri Supervisor  | 1 per cluster                                                                               | Key Informant Interview (KII) Checklist   |
| 10   | Sub-division Agriculture Officer (SDAO)                  | 1 per sub-division                                                                          | Key Informant Interview (KII) Checklist   |
| 11   | District Superintendent Agriculture Officer (DSAO)       | In all 7 Districts                                                                          | Key Informant Interview (KII) Checklist   |



## Beneficiary Questionnaire

A beneficiary questionnaire described above had the following information:

|                         |                                                            |
|-------------------------|------------------------------------------------------------|
| Part-A                  | Basic Information                                          |
| Part-B                  | Farmer Field School (FFS)                                  |
| Part-B<br>(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 project functionaries namely (Krushi Tai, AA, CA etc.). The information obtained from the key informants was the qualitative information required for the process and progress monitoring of the Project. 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

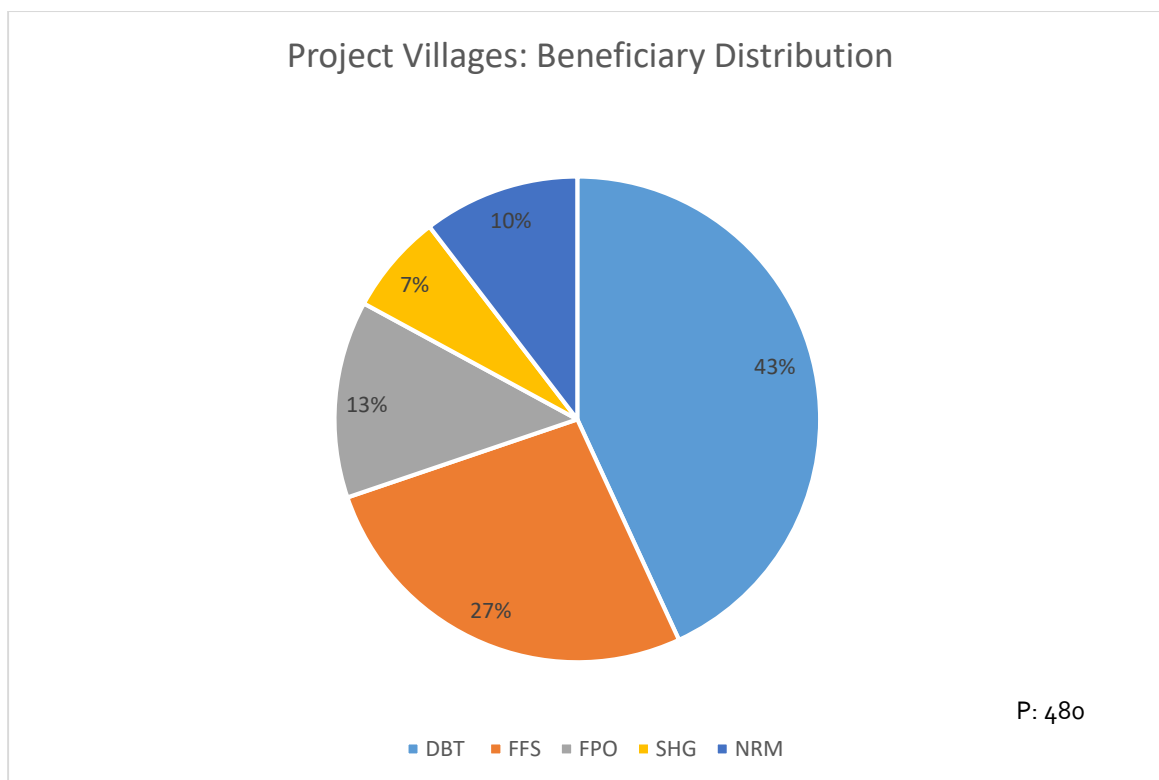
| Sample Coverage-Project Villages |           |           |               |
|----------------------------------|-----------|-----------|---------------|
| District                         | Clusters  | Villages  | Beneficiaries |
| AKOLA                            | 7         | 7         | 90            |
| AMRAVATI                         | 5         | 5         | 52            |
| BULDHANA                         | 7         | 7         | 106           |
| JALGAON                          | 6         | 6         | 93            |
| WARDHA                           | 1         | 1         | 22            |
| WASHIM                           | 3         | 3         | 63            |
| YAVATMAL                         | 3         | 3         | 54            |
| <b>Total</b>                     | <b>32</b> | <b>32</b> | <b>480</b>    |

Table 5: Sample Coverage- Control Villages

| Sample Coverage-Control Villages |           |           |               |
|----------------------------------|-----------|-----------|---------------|
| District                         | Clusters  | Villages  | Beneficiaries |
| AKOLA                            | 3         | 3         | 59            |
| AMRAVATI                         | 3         | 3         | 24            |
| BULDHANA                         | 3         | 3         | 47            |
| JALGAON                          | 3         | 3         | 40            |
| WARDHA                           | 1         | 1         | 18            |
| WASHIM                           | 2         | 2         | 28            |
| YAVATMAL                         | 1         | 1         | 24            |
| <b>Total</b>                     | <b>16</b> | <b>16</b> | <b>240</b>    |

#### Beneficiary Sample Coverage

Total five categories have been covered as part of project beneficiaries: Direct Benefit Transfer (DBT), Farmer Field School (FFS), Community based Natural Resource Management (NRM) activities, Farmer Producer Companies (FPCs) and Self Help Groups (SHGs). Total 480 beneficiaries were covered as part of CM-V, 43% of the respondents were DBT beneficiaries, followed by 27% FFS. NRM works comprised 10% of the beneficiaries respectively. About 13% were part of FPCs and 7% SHG under the project for CM-V.



*Figure 4: Beneficiary Distribution in Project Villages*

*Table 6: Sample Coverage of Beneficiaries in Project Villages*

| District / Activity             | Akola     | Amravati  | Buldhana   | Jalgaon   | Wardha    | Washim    | Yavatmal  | Total      |
|---------------------------------|-----------|-----------|------------|-----------|-----------|-----------|-----------|------------|
| <b>DBT - Pre-sanction given</b> | 6         | 4         | 23         | 22        |           | 3         | 6         | 64         |
| <b>DBT - Subsidy Released</b>   | 15        | 10        | 52         | 50        | 1         | 6         | 9         | 143        |
| <b>Guest Farmer</b>             | 21        | 22        | 13         | 10        | 5         | 7         | 18        | 96         |
| <b>Host Farmer</b>              | 7         | 6         | 6          | 7         | 1         | 2         | 3         | 32         |
| <b>NRM/Community Farm Pond</b>  |           |           |            |           | 10        | 30        | 10        | 50         |
| <b>SHG</b>                      | 14        | 4         |            | 4         | 2         | 6         | 2         | 32         |
| <b>FPO</b>                      | 27        | 6         | 12         |           | 3         | 9         | 6         | 63         |
| <b>Total</b>                    | <b>90</b> | <b>52</b> | <b>106</b> | <b>93</b> | <b>22</b> | <b>63</b> | <b>54</b> | <b>480</b> |

### Beneficiary Sample Coverage in Control Villages

For control villages, total of 240 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.

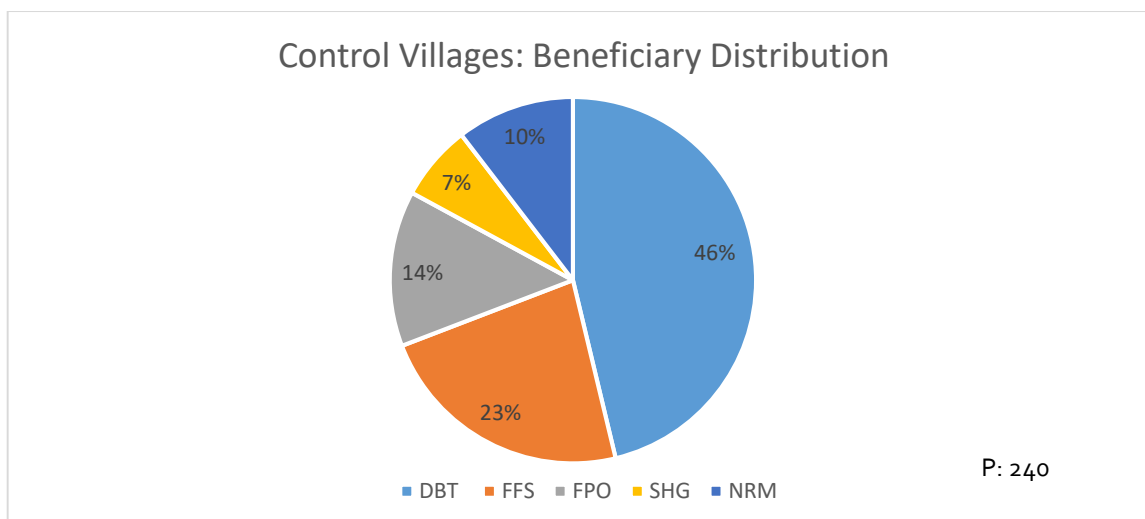


Figure 5: Beneficiary Distribution in Control Villages

Table 7: Sample coverage of Beneficiaries in Control Villages

| District/<br>Activity    | Akola     | Amravati  | Buldhana  | Jalgaon   | Wardha    | Washim    | Yavatmal  | Total      |
|--------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| DBT - Pre-sanction given | 3         | 4         | 6         | 6         | 1         | 1         | 7         | 28         |
| DBT - Subsidy Released   | 8         | 8         | 27        | 27        | 4         | 3         | 6         | 83         |
| Guest Farmer             | 11        | 7         | 8         | 4         | 2         | 3         | 10        | 45         |
| Host Farmer              | 4         | 2         |           | 1         | 1         | 1         | 1         | 10         |
| NRM/Community Farm Pond  | 10        |           |           |           | 5         | 10        |           | 25         |
| SHG                      | 8         |           |           | 2         | 2         | 4         |           | 16         |
| FPO                      | 15        | 3         | 6         |           | 3         | 6         |           | 33         |
| <b>Total</b>             | <b>59</b> | <b>24</b> | <b>47</b> | <b>40</b> | <b>18</b> | <b>28</b> | <b>24</b> | <b>240</b> |

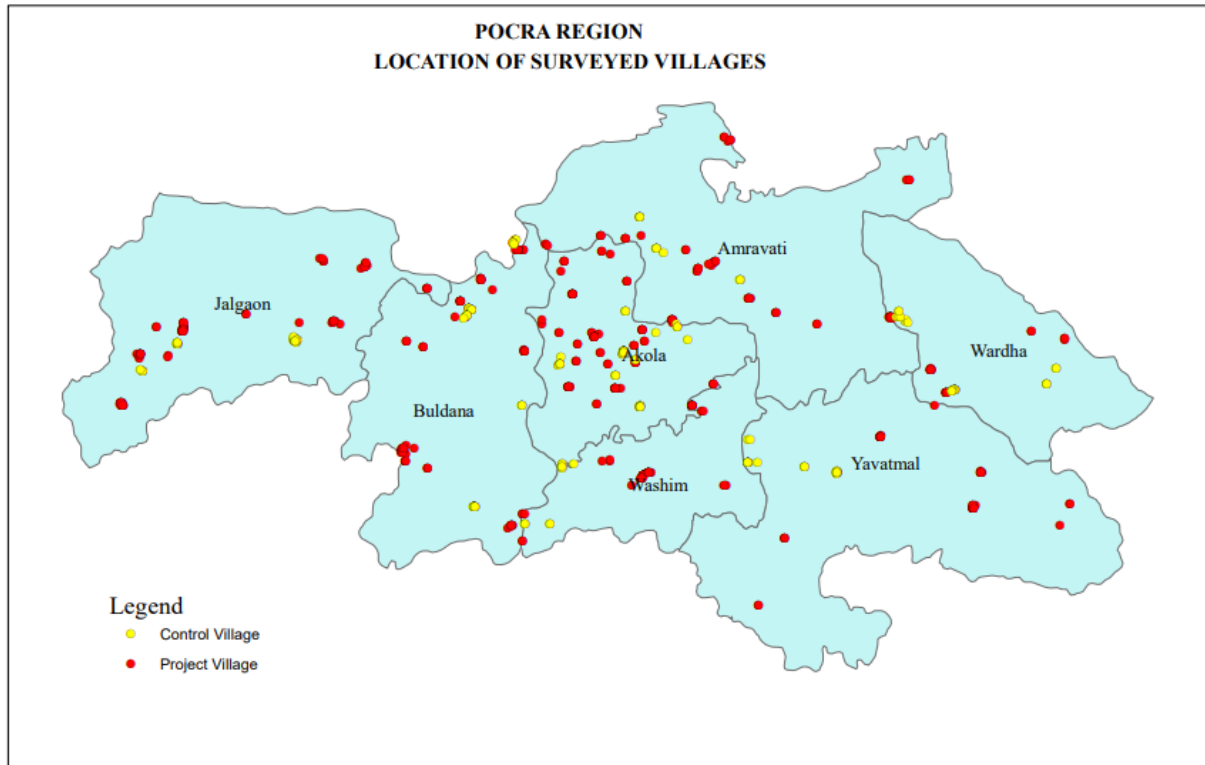


Figure 6: Beneficiary Coverage in Project & Control Villages

## 4. Findings from CM-V 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 activity 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-V, data had been collected on relevant parameters under this component and activities. Participatory micro planning, FFS and DBT effectiveness had 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 had 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 had been obtained from farmers, VCRMC and Krushi Tai on the awareness, functioning, issues and challenges.

#### Salient Features of Micro Plans

Micro planning had 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                                                                                                                                                                                                                                                                                                   |



## Satisfaction and Awareness of Project & Micro Planning

As per CM-IV Survey we had already concluded that 97.5% people are aware of PoCRA project. Now as a part of the CM-V Survey, beneficiaries were asked about their satisfaction levels on various aspects of the project which are appended below.

### Process for accessing the project benefits

When questioned about the satisfaction level on the process for accessing the project benefits, 70% beneficiaries said they very satisfied, and only 3% said they were not aware or involved in the project.

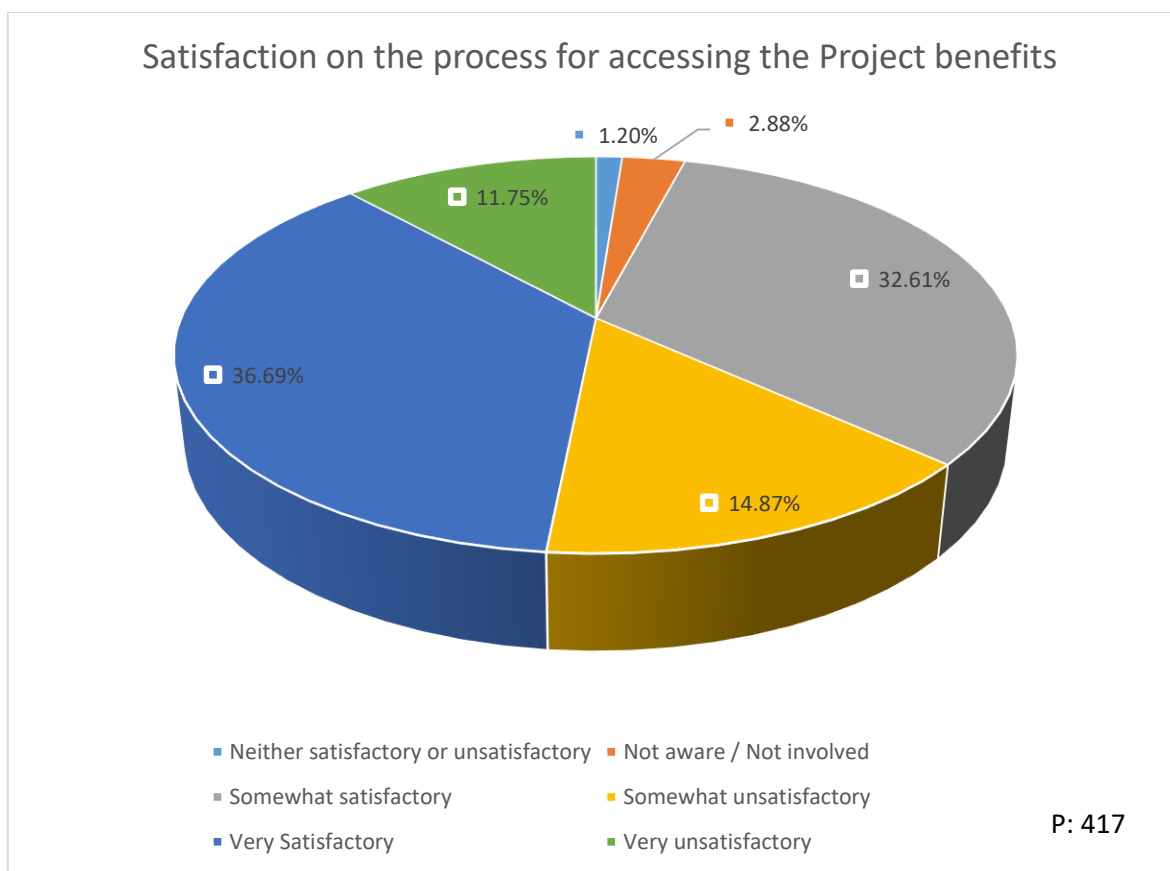


Figure 7: Satisfaction on the process for accessing the Project benefits

### Work of VCRMC

Responding to question on satisfaction on the work of VCRMC, 70% of the beneficiaries said that they are satisfied, 11% respondents said that they are very unsatisfactory on the work of VCRMC, about 4% respondents were not aware or involved with the project.

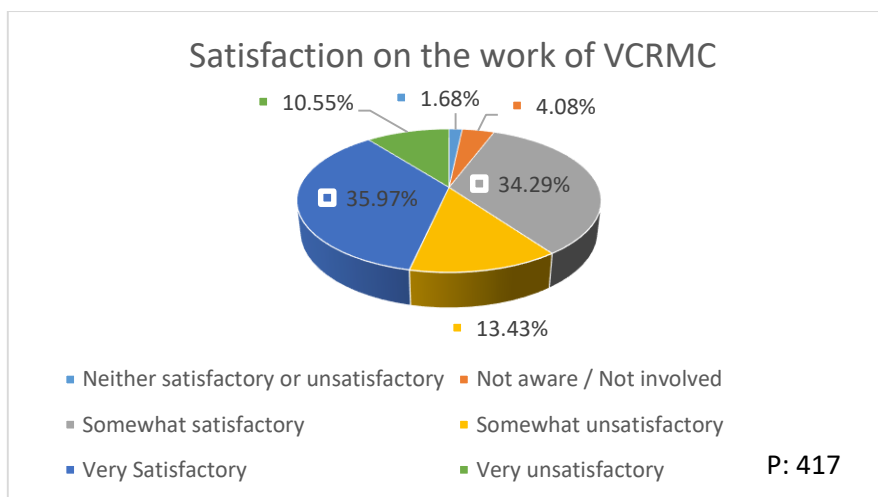


Figure 8: Satisfaction on the work of VCRMC

### Support provided by the project staff in application process

When asked about on the satisfaction with the support provided by the project staff in application process and availing the benefits from the project, 68% said they are satisfied and 12% were not satisfied and 3% were not aware or involved with it.

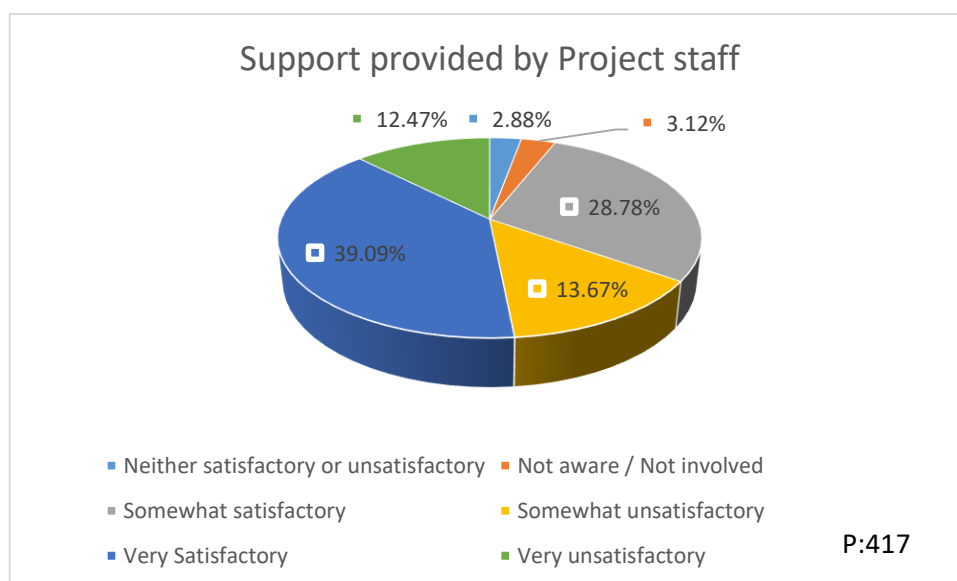


Figure 9: Support provided by Project Staff

### Knowledge of FFS Facilitator and technology demonstration sessions in the FFS

Regarding satisfaction with the knowledge of Farmer Field School facilitator, who took the technology demonstration sessions in the Farmer Field School; 63% respondents were

satisfied, while 11% were very unsatisfied, 8% of the respondents were not aware nor involved with FFS activities.

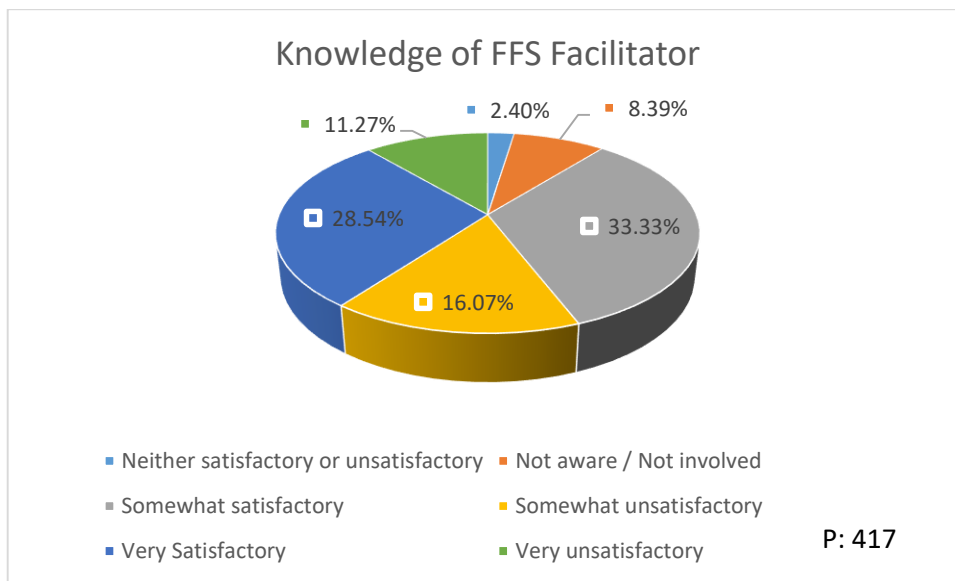


Figure 10: Knowledge of FFS Facilitator

### Work performance of Krushi Tai

When questioned about how they are satisfied are with the work performance and support received from Krushi Tai, 67% from 417 respondents from Project area said that they are satisfied with the work performance and support from Krushi Tai, while 7% respondents said that they were not aware about functioning of Krushi Tai.

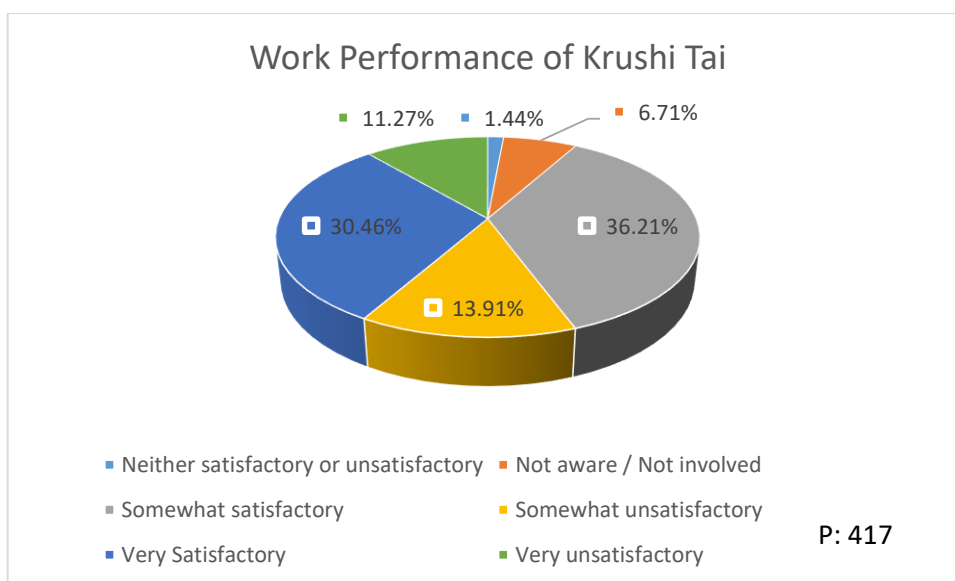


Figure 11: Work Performance of Krushi Tai

## **Findings from KIs with Krushi Tai**

During the CM-V Survey, a total of 30 Krushi Tais' were covered, with 5 Krushi Tais from Amravati, 6 from Akola, 7 from Buldhana, 6 from Jalgaon, 3 from Washim, 2 from Yavatmal, and 1 from Wardha district.

### **Work Experience of Krushi Tai**

In Amravati, Jalgaon, Washim, and Wardha districts, all the Krushi Tais' interviewed had no prior work experience. In Buldhana district, only one Krushi Tai had worked in a financial agency, and in Akola district, only one had prior experience as a CRP in the UMED project. In Yavatmal district, both Krushi Tais interviewed were involved in the MSRLM project as a CRP.

### **Awareness about the Project Activities for Landless**

The majority of Krushi Tais interviewed were aware about various project activities, especially for landless stakeholders. They mentioned that landless stakeholders are not interested in activities such as poultry, sericulture, and apiculture. Landless were reportedly more interested in goatery which had been put on hold in PoCRA.

### **Activities taken up by Krushi Tais as a part of PoCRA project**

The Krushi Tais had attended VCRMC meetings and were motivating women farmers to participate in various activities and FFS. They were taking follow-up of the implementation of pre-sanctioned activities and working as per the instructions of Agriculture Assistants. They were also providing updated information about project activities to the villagers.

### **Trainings Received by Krushi Tai**

In the Amravati district, Krushi Tais from the Shivarkhed and Sarfabad clusters have received one-day training at the Taluka office, covering topics such as roles and responsibilities, project guidelines, project activities, remuneration, and appraisal. In the Akola district, Krushi Tais from five out of six clusters have attended the one-day training, with the Bahirkhed cluster Krushi Tai being the only one who had not received training. In Buldhana district, Krushi Tais from the Alalmpur and Kothali clusters have not attended any training, while those from Yewata, Sawargaon, and Gavhan Ladnapur have received one-day training. In Jalgaon district, Krushi Tais from the Kothali, Ozar, and Patkhede clusters have not attended any training, while those from Raipur, Adgaon, and Shindi clusters have received one-day training. In Washim district, Krushi Tais from the Kisan Nagar, Amdari, and Malegaon Bhat Umara clusters have not received training. In Wardha district, the Krushi Tai from Bopapur had attended the one-day training at Pawnar. In Yavatmal district, Krushi Tais from Sawargarh and Pimpri Road have attended the one-day training.

### **Duration and Topics of Training Program Attended**

A one-day training program was organized covering various topics including roles and responsibilities, project guidelines, project activities, remuneration, and appraisal.

### **Any Exposure Visit Attended Outside PoCRA**

In Wardha district, the Krushi Tai from the Bopapur cluster attended an exposure visit to Rohana village in the Arvi Tehsil to collect information about a cloth store. In Amravati district, an exposure visit was arranged within the district to Tiosa Tehsil to discuss and collect information about climate resilient farming. However, no other exposure visits were arranged for the Krushi Tais in the region.

### **Participation in Project's micro-planning**

Krushi Tais from both Phase-I and II clusters participated in a three-day micro planning process for their respective clusters. However, Krushi Tais from Narayanpur, Koylari and Shivarkhed clusters in Amravati district, Khakta and Bahirkhed clusters in Akola, Kolkhed cluster in Buldhana, Kothali, Raipur and Patkhede clusters in Jalgaon, Amdari cluster in Washim district, and Sawargarh cluster in Yavatmal district did not attend the micro planning process. Out of the 30 Krushi Tais, 11 did not attend the micro planning process.

### **Approaching the project beneficiaries with incomplete activities**

The Krushi Tais have been interacting with farmers to encourage them to implement project activities. They explain the benefits and assure farmers of subsidies in a short period. They mobilize farmers and women farmers by inviting them to meetings and FFS trainings. They approach farmers regularly and update the VCRMC members on the status of activity implementation.

### **Responsibility for Suggestion/ Grievance box placement**

It was noted that none of the Krushi Tais were aware of their role in placing the Grievance Box at the Gram Panchayat.

### **Awareness of the beneficiary prioritization criteria**

During the interaction it was found that Krushi Tais have knowledge of the beneficiary prioritization criteria or the inclusiveness system in the DBT application. This system gives priority to SC, ST, widow women farmers, handicapped farmers, landless farmers, women-headed families, small and marginal farmers.

### **Role in mobilizing female farmers**

It was observed that female farmers were more frank/ at ease with Kurshi Tais. They have engaged with various groups such as marginal farmers, poor and landless households, women-headed families, and tribal families to provide information about the project and its activities. They have encouraged women farmers to participate in Self-Help Group meetings and attend Farmer Field School sessions to avail benefits from the project.

### **Group Meetings Attended**

The majority of Krushi Tais attended all monthly meetings, meetings for application recommendations, and also attended FFS and women SHGs meetings.

### **Challenges in performing the responsibilities in project implementation**

The Krushi Tais main responsibilities include staying updated about project guidelines and activities, sharing this information with farmers, and justifying the withheld activities to farmers. Delayed subsidy disbursement causes financial problems for farmers and creates a negative impact, so Krushi Tai's assure farmers about the release of subsidy to create a positive impact. Low response from women beneficiaries and low participation from SHGs are major challenges.

### **Family Support**

The Krushi Tais have received family support in performing their roles and responsibilities for the project, and none have reported being unable to work. However, in some cases, the Krushi Tai's husbands perform their field work, which can make it difficult for them to provide updated information on activity implementation.

### **On Activities being Monitored**

It had been observed that approximately 50 percent of the Krushi Tais are unaware of the performance monitoring and three-month appraisal conducted by Agriculture Assistants.

Based on the observations, it can be concluded that there was a lack of awareness among about half of the Krushi Tais regarding the performance monitoring and appraisal process conducted by Agriculture Assistants. This highlights the need for better communication and training to ensure that all Krushi Tais are aware of their performance expectations and the appraisal process.

### **Regarding First remuneration/ Salary**

Krushai Tais in different districts have received their first remuneration except for a few. In Amravati district, Krushi Tai in Narayanpur cluster had not received her first remuneration,

while in Akola district, Krushi Tai in Belura Kh. Bahirkhed and Shelu Najik clusters have received it. In Buldhana district, all seven clusters' Krushi Tai have received their first remuneration. In Jalgaon district, Krushi Tai in Adgaon cluster had not received her first remuneration. In Washim district, all three clusters' Krushi Tais have received the first remuneration. In Wardha district, Bopapur cluster Krushi Tai had received the first remuneration. In Yavatmal district, Krushi Tai in Sawargarh & Pimpri road have received the first remunerations, while the Krushi Tai at Bhimsenpur cluster was not working.

### **Owning a Mobile Phone**

Approximately 70% of the Krushi Tais own mobile phone, while the remaining 30% use the mobile phones of their family members.

The high percentage of Krushi Tais who own mobile phone was a positive sign for the project as it facilitates communication between them and the farmers. However, the remaining 30% who use their family members' phones may face difficulties in staying connected with the project and the farmers. Therefore, steps should be taken to ensure that all Krushi Tais have access to a mobile phone to improve communication and the effectiveness of the project.

### **Awareness of Social Media Platforms**

Most of the Krushi Tai's are familiar with WhatsApp and YouTube but not about other social media platforms like Facebook, Twitter, LinkedIn. They were not familiar with digital payment applications. Therefore, there was a need to create awareness about the use of digital platforms among them.

### **WhatsApp group Activities**

The majority of Krushi Tais are part of WhatsApp groups at the cluster and subdivision level, and they regularly check messages and notifications sent by the project.

### **Awareness on digital Saksharta program**

Only 20% of the Krushi Tais were aware of the digital *Saksharta Abhiyan* (MPGDISHA) for all women stakeholders. There was a need to create more awareness among women stakeholders about the digital *Saksharta Abhiyan* (MPGDISHA), as only a small percentage of Krushi Tais are currently aware of it. This could help improve digital literacy and skills among women, which could have a positive impact on the project's success.

### **Enrolment for training**

It had been observed that around 80% of the Krushi Tais are not aware of the training enrolments, and none of the officials have informed them about it. However, some Krushi Tais

from different districts have enrolled for the training. Therefore, it was essential to inform all the Krushi Tais about the training opportunities and ensure that they receive proper guidance and support to participate in the training programs.

## Findings from KIIs with VCRMC Members

### Formation of Village Climate Resilience Management Committee

#### Composition of VCRMC

- The VCRMC consists of a total of 17 members, 13 of whom are executive members, while the remaining four are non-executive members.
- The executive members of VCRMC include the Sarpanch, Dy. Sarpanch, GP members (Male and Female), Progressive Farmer, Farmer (ST or OBC), Progressive Farmer (Female, ST, and VJNT), FPC/FPO, SHG Women members, and two farmers involved in farm-related businesses. The non-executive members comprise of Agri. Asstt., Gramsevak, Cluster Assistant, and Krushi Tai.
- On an average, the VCRMC selected 5-6 women member to be a part of the committee.

#### Total Number of women in the VCRMC body-

- There were a total of 6-7 women working in the VCRMC.
- Krushi Tai serves as a non-executive member of the VCRMC.

**Note:** It is required that out of the 13 executive members of the VCRMC, a minimum members shall belong to the marginal or small category including representation of general, schedule caste, scheduled tribe, VJNT or NT communities male and female members. There shall be 50% of the women representation in VCRMC.

#### VCRMC constituted under PESA (Panchayats Extension to Scheduled Areas)

- None of the villages in our CM-V sample were classified under PESA Act.
- 19 out of 39 sample VCRMCs received funds of Rs. 25000/- for setting up office, purchase of furniture, office maintenance, and payment of remuneration of Krushi Tai's. Total 29 VCRMCs have covered under CM-V, out of that 19 VCRMCs have received the fund.
- Total 19 VCRMC members had individual Forest Rights, but none of them were recipient of benefits from the PoCRA project.

#### Documentation

- It was observed that most of the VCRMCs have maintained the following documents:
  1. Proceeding register



2. Cash book
  3. Incoming check/DD register
  4. Cheque/DD issue register
  5. Advance register
  6. Consumable items stock register
  7. Dead stock and immovable register
  8. Audit paras compliance register
  9. Project ledger
  10. Suggestions/grievance registers.
- The proceeding register was maintained by Cluster Assistants, while Agri. Asstt. of the clusters maintained the other books.
  - The majority of VCRMCs in Phase-I and II had received grants for office maintenance and Krushi Tai remuneration. These committees had utilized the grants, but the newly elected VCRMC or non-working Sarpanch due to GP elections had not received any grants.

### Meetings

- Monthly meetings were typically arranged, and additional meetings may be scheduled based on received applications, in order to issue recommendations for pre-sanctions. Also, It has been observed that monthly meetings were arranged in the clusters. Meetings were arranged within 15 days, depending upon the applications receiving for the pre-sanctions
- It has been observed that meetings were conducted in most of the 32 clusters, although some were not able to produce their meeting registers during the visits. It has been observed that meetings were conducted in 32 clusters, meetings registers were not produced at some clusters during the visits

### Capacity Building

- It has been observed that approximately 50% of the VCRMC members had attended the capacity building training provided under the project. However, newly formed VCRMCs in phase-II and III clusters had not attended the training and were therefore unaware of the project guidelines and activities. Initially, VCRMC members attended the training through online streaming, which helped raise awareness among the members. Some phase-III clusters such as Belura Kh. in Akola district, Ladnapur in Buldhana district, Shindi, Ozar and Potkhede in Jalgaon district, and Amdari in Washim district had not yet participated in the capacity building training offered under the project.

- Half of the women members were unable to attend the capacity building programs due to their family responsibilities. However, the other women members showed interest in the new activities initially.

### **Awareness on Environmental Safeguards**

The project had identified the following key strategies, under social safeguards, as part of Social Management Framework (SMF) and Tribal People Planning Framework (TPPF) and Gender Action Plan (GAP) including (i) Social and Tribal Inclusion; (ii) Participation and Ownership; (iii) Transparency and Accountability and (iv) Grievance Redressal. Further, the project had identified the following key strategies, under Environmental Safeguards, as part of Environmental Management Framework including (i) Integration of EMF checklist into the Micro-Level Planning Mobile Application; (ii) Incorporation of IPNM into the Farmer Field School activity; (iii) Environmental Checklist incorporated into the Agri-Business proposals for DBT; (iv) Training and capacity building programs incorporating environmental safeguards as envisaged in the project while implementing the in project activities and while physical assets were purchased/ undertaking physical construction activity.

### **Mobilization**

The committee members had engaged with farmers, marginalized groups, SC, ST, and tribal communities to encourage them to take advantage of the project benefits. They had also assisted in filling out applications for villagers. Upon receiving applications. In VCRMC meeting, the VCRMC members scrutinize the applications received and approve/ rejects based on project's guidelines.

### **Motivations for Uncompleted Activity Purchases**

The Committee interacted with farmers to emphasize the importance of timely asset purchasing. They assisted farmers who received pre-sanctions and motivated them to consult authorized dealers for purchasing assets despite financial difficulties. The committee encouraged timely submission of bills for subsidy benefits.

### **Satisfaction on Beneficiary Prioritization Criteria**

It was observed that the VCRMC was content with the current beneficiary prioritization criteria in the DBT application and had no plans to suggest modification to them. However, it was recommended that the subsidy be released promptly after the spot verification process was completed.

### **Role of women in VCRMC meetings**

It was observed that there was a low participation of women members in VCRMC meetings and FFS. While most of the women members who participated in the meeting were unable to express their opinions, there were few women members who had attended the meetings had actively participated and provided valuable suggestions during deliberations of the decision-making VCRMC meetings. To ensure that all the female VCRMC members take active part in the deliberations of the committee meetings, It was recommended to arrange capacity building training and information sharing sessions for female members of VCRMC regarding the project.

### **Status of Tribal population**

The tribal community was mostly concentrated in Amravati, Yavatmal, and Jalgaon districts within the project area. Some of the women members who participated in the meeting were unable to express their opinions. The committee had prioritized the applications of the tribal community and recommended them for pre-sanctions promptly. However, no other approaches were observed to be used by the committee.

### **Nomination of Krushi Tai**

During the visits to 32 cluster, 28 Krushi Tais were available for interactions, while 4 were not available. According to cluster officials, Krushi Tais from Sarfabad and Narayanpur in Amravati district, Mirzapur in Akola district, and Bhimsen Nagar in Yavatmal district were currently working in the clusters but were not available during the visits.

Out of the 32 Krushi Tais, five were newly recruited, namely Shindi, Adgaon, Patkhede, and Kothali clusters in Jalgaon district and Malegaon Bhat Umara in Washim district. The remaining 27 Krushi Tais had been working since the inception of the project.

## **Implementation-Individual Activities**

### **Key reasons for rejections of individual grant applications**

- The primary reason for the rejection of individual activity was lack of funds (margin) to purchase the assets.
- Activities such as Electric Motor Pump, Diesel Pump, PVC pipes, and Farm Mechanization were no longer available to farmers.
- Goat rearing activity was also discontinued and was unavailable to landless and tribal villagers.

### **Key reasons for the delay in approval of individual grant applications**

After the submission of the spot verification report, the Account Officer at DSAO office sorted out the applications and recommended the release of the subsidy. However, delays in

releasing subsidies occurred because, on many occasions, beneficiary bank accounts were not linked with Aadhaar for DBT.

Despite receiving pre-sanction from the project, farmers had not started work due to insufficient funds.

### **Key challenges in implementing individual beneficiary activities**

Farmers had not implemented individual activities, even after receiving pre-sanction under the PoCRA project due to insufficient funds. Motivating them to purchase assets remained a key challenge. To address this, financial arrangements for farmers were made by negotiating with dealers.

### **Implementation – Community activities**

### **Key challenges in implementing community level activities**

- The consent of farmers was required while planning community activities.
- Preparing and sanctioning estimates on time was essential for completing other processes. Submitting all necessary documents on time through the provided app was also essential.
- The issuance of work orders and initiation of work implementation during the season were the key challenges.
- Work planning and implementation in saline soil areas.

### **Situation of ground water level**

Most cluster villages have not implemented soil and water conservation works, such as Graded Bunding, Farm Ponds (community and individual), Nala Deepening and Widening, according to the MLP, resulting in a lack of significant impact on groundwater.

## **Micro Planning Process**

### **Participation in micro planning**

Both male and female members of VCRMC participated in the Micro Level Planning process. The committee members contributed to the identification of activities and shared information on the availability of various resources, such as soil type, crops grown, yield, groundwater level, area under *Kharif* and *Rabi* crops, number of SHGs and FPCs, community residents, and the socio-economic status of the villagers.

### **Awareness about Village Development Plan/DPR**

According to discussions with the committee members, the Sarpanch and Deputy Sarpanch well informed about the Village Development Plan (VDP) or Detailed Project Report (DPR) of the village, whereas other members had limited understanding. The VCRMC members were equipped with knowledge on identifying basic elements such as directions, roads, households,

and community institutions. However, the committee members were unaware of the approval process for VDP/DPR in the Gram Sabha.

### **Awareness of water budget**

The members of VCRMC were well-informed about the water budget of the village. They had suggested incorporating activities such as Graded Bunding, Farm Ponds, Trenches, CNBs, and Plantations in the MLP. However, none of the villages had followed the water budget chart.

According to the committee members, proper planning of water availability, tree planting, reducing the use of chemical fertilizers and pesticides, using traditional crop varieties, and adopting organic farming were necessary to cope with climate change.

### **Efforts by VCRMC to make Village climate resilient**

The FFS conducted under the PoCRA project had raised awareness about the impact of climate change and various technologies that can help communities adapt to it. Participants had recognized the importance of tree planting, reducing chemical inputs, using traditional crop varieties, and adopting organic farming practices to build climate resilience. In addition, activities such as BBF techniques, sowing across the slope, use of Pheromone Trap, micro-irrigation, Shade-net houses, horticulture plantations, and soil and water conservation works were recommended to help villages become more climate-resilient.

### **Installation of Suggestion/complaint box**

It was noted that complaint boxes were present in 21 out of 32 cluster villages. However, complaint boxes were not observed in Shivarkhed in Amravati district, Mirzapur in Akola district, Kaulkhed, Kalegaon, and Gavhan in Buldhana district, as well as Raipur, Kothali, Pathkhede, Shindi, Adgaon, and Ozar in Jalgaon district. The complaint boxes were installed at the Gram Panchayat of the cluster villages.

### **Process adopted to address the complaints**

Most of the complaints had been received orally and the committee members had discussed and provided solutions to the beneficiaries. It was suggested that written complaints should be submitted in the complaint box provided at the Gram Panchayat of the cluster village. If written complaints were received from beneficiaries or village residents, VCRMC members would discuss these in meetings and inform the cluster officials for resolution. Complaint registers were being maintained, but none of the register complaints had any written complaints.

### **Observation by Investigator on Women Participation**

According to the Investigators' observations, only a few women participated and actively responded in the FGDs or meetings. However, when the Sarpanch was a woman, more women members attended the meetings and actively participated in the discussions. Therefore, proper planning of capacity-building training should be done for women members, and all updated information should be provided to them in a timely manner. This will definitely improve their participation in the project activities.

### **Findings from KIs with Agriculture Assistant (AA)**

During the CM-V Survey, a total of 30 Agricultural Assistants were interviewed in seven districts: 4 in Amravati, 6 in Akola, 7 in Buldhana, 6 in Jalgaon, 3 in Washim, 1 in Wardha, and 3 in Yavatmal.

### **Clusters and villages Assigned under the project**

On average, the Agriculture Assistants under this project have been assigned three to seven villages and one to three clusters.

### **Activities in maximum demand and reason**

The demand for various activities varies in different districts. In Amravati, the highest demand was for Sprinkler sets, PVC pipes, and Electric Water Pumps. In Akola, the demand was for Sprinkler sets, PVC pipes, Diesel Water Pumps, Seed Production Plots, and Goat rearing. In Buldhana, micro irrigation units, farm mechanization, and Horticulture Plantations are in high demand. In Jalgaon, it's Drip Irrigation, Sprinkler sets, Horticulture Plantations, and Goat rearing. In Washim, Sprinkler sets, PVC Pipes, Electric Water Pumps, and Goat rearing were in demand. In Yavatmal, the demand was for Sprinkler sets, PVC Pipes, Construction of the Well, Electric Water Pumps, and Goat rearing. These activities are in high demand because these help farmers with water availability and life-saving irrigation during dry spells. Goat rearing is also in high demand among landless beneficiaries.

### **Challenges faced in constituting the VCRMC**

.The formation of VCRMCs (Village Climate Resilience Management Committee) through Gramsabha was a major challenge, as farmers are divided along cast politics affiliations. The selection of VCRMC members must follow project guidelines and represent the entire community, but politics can complicate the process. The Sarpanch being the VCRMC President and can influence in choosing of VCRMC members. Handling the Gramsabha without dispute was also a challenge.

The formation of VCRMCs was an important aspect of the project, but challenges related to Gramsabha and the selection of members need to be addressed to ensure proper representation and fairness. The role of the Sarpanch in the selection process should also be monitored to prevent bias. Effective communication and dispute resolution strategies can help manage challenges in constitution of VCRMCs.

### **Difficulties faced in managing Mandatory Expense**

Based on the information provided, Gavhan, Taluka-Shegaon, Dist. Buldana VCRMC has suggested for increasing the grant support to the VCRMC. So it was concluded that the SDAO office had provided Rs. 25,000 for expenditure on Krushi Tai's remuneration and daily administrative expenses of VCRMC. However, the Agriculture Assistants have indicated that more funding was required to cover the expenses of stationary, photocopying and organizing village-level meetings. The current funding was mostly utilized for office furniture and Krushi Tai's remuneration. Therefore, there was a need to reassess the funding allocation to ensure that all necessary expenses are covered adequately. Further, there are issues of delay in release of funds from block office.

### **Evaluation of the performance of Krushi Tai**

Krushi Tais are being evaluated on quarterly basis by Agriculture Assistants, and the evaluation format was deemed sufficient as it covers all aspects of their work

### **Individual based Project Activities**

#### **Key reasons for the delay in approval/spot verification**

The Agriculture Assistants were assigned responsibilities to handle large number of villages, making it difficult for them to conduct spot verification of individual applications. This was especially difficult during the rainy season, which causes delays in approval. Another reason for delay was the non-submission of complete set of documents by the applicants.

#### **Activities with more complaints**

No complaints or irregularities have been reported for the activities carried out in the clusters.

#### **Key challenges in implementation of individual activities**

The key challenges in implementing individual activities include poor internet connectivity, non-submission of complete documents by farmers, incomplete documentation related to well or irrigation source in 7/12 and 8A documents, financial limitations of farmers, limited recommendations for construction of wells, and limited approval for tractor activity. It was recommended that farmers be given partial subsidy or financial support to implement the



activities and with minimum requirements of documents to be submitted along with the with the application.

The implementation of individual activities faces several challenges on the account of issues like poor internet connectivity and limited staff availability, ratio of Agricultural Assistants to number of farmers per village etc. that needs to be addressed to improve the implementation of individual activities.

### **Community based (NRM) Project Activities**

#### **Status of implementation of Community/NRM activities**

Out of the 30 project villages visited, only six villages had carried out community/NRM activities such as Nala Deepening, Cement Nala Bund (CNB), Farm Pond, and Graded Bunding. These villages are Belura Kh. in Akola district, Yevata in Buldhana district, Kisan Nagar in Washim district, Bopapur in Wardha district, and Pimpri Road and Bhimsenpur in Yavatmal district. In Kharpan area, only Nala Deepening and Farm Ponds activities were allowed. In the remaining 24 villages, estimates and proposals of community activities were submitted for approval, and few villages had received the approval but were waiting for work initiation order. However, in some villages, micro level planning could not be done during the COVID-19 period due to the restrictions.

#### **Reasons for delay in implementation of Community/NRM activities**

The delay in the implementation of community/NRM activities was due to the time-consuming E-tendering process and delays in issuing work initiation orders. Some farmers were not interested in implementing Graded Bunding/Farm Ponds due to small land holdings.

#### **Activity most VCRMC recommend**

The NRM activities that are most commonly recommended by VCRMC include Nala Deepening, CNB, Farm Ponds, and Graded Bunding.

#### **Key challenges in implementation and solutions**

- E-class land was required in the village for implementing common NRM activities.
- Farmers need to be willing to implement NRM activities on their land, as some become reluctant during implementation.
- Farmers with smaller land holdings may not be interested to implement NRM activities.
- Importance of NRM activities in groundwater level upliftment and conservation of soil and water resources needs to be emphasized.



It was important to educate and involve farmers in the planning and implementation of NRM activities, and to ensure that suitable land was available for such activities. The benefits of these activities should also be highlighted to encourage more farmers to participate, especially those with smaller land holdings.

### **Impact of soil and water conservation structure**

The implementation of NRM activities such as Graded Bunding, plantations, Nala Deepening, Farm Ponds, CNB, and CCT-DCCT construction have resulted in various benefits. Soil erosion had decreased, ground water level had improved, water availability had increased due to Farm Ponds, Wells, Nala Deepening, construction of CNB and the moisture availability period had increased resulting in increased yield and area of the *Rabi* crops.

### **Awareness of the environmental safeguards**

- Environmental awareness had increased among project staff and farmers through VDP/CDP.
- Planning of activities and utilization of land according to land use pattern.
- Understanding of concept of climate change and to modify agronomic practices accordingly.
- Replacement of water intensive crops.
- Harmful practices like using banned pesticides and chemical fertilizers, cutting down trees, and improper disposal of containers and crop residues should be avoided.
- Organic farming should be promoted.
- Community/NRM activities should be implemented in an environmentally friendly way.
- Emphasis on avoidance of open grazing.

It was crucial to prioritize the implementation of environmentally sustainable practices in agriculture. The increased awareness among project staff and farmers was a positive step, but more efforts are needed to promote organic farming and reduce the use of harmful chemicals. Proper implementation of community/NRM activities can help conserve soil and water resources without causing harm to the environment.

### **Status of Compliance followed by Village/Cluster**

The Agriculture Assistants reported that environmental compliances was not being strictly followed in the village/cluster. Farmers are continuing with their regular practices and were not concerned about environmental hazards. Despite awareness being created by the cluster team members, very few farmers were following environmental safeguards.

It was crucial to increase awareness and education on environmental conservation among farmers and promote the adoption of sustainable farming practices. The cluster team members should continue to create awareness and work towards motivating farmers to adopt environmental safeguards. It was also important to monitor and enforce compliance with environmental regulations to ensure sustainable development in the area.

### **Key challenges faced for successful implementation of FFS**

The main challenge faced during the FFS was the availability of farmers during the season. Furthermore, the number of women participating in the FFS was low and most of the landless farm laborers are unable to attend. Despite informing them about the FFS 4-5 days in advance with the help of Sarpanch and Krushi Tai, attendance remains low.

### **Feedback on the water budgeting application**

The feedback on the water budgeting application suggests that there were several issues with its operation. These issues include problems with uploading and saving data, inconsistencies in the information accessed and entered by surveyors, and slow upload times. The app was not considered to be user-friendly, and requires improvement and upgrading.

### **Opinion on information needed from agromet advisory services**

Farmers require accurate and precise agromet advisory services for forecasts on rainfall, pest and disease attacks, and protection measures. This information should be tailored to the specific area and crop.

### **Useful trainings by PoCRA**

Farmers found the trainings on the MLP app and the soil and water conservation app to be useful. The MLP app provided comprehensive information on village resources such as water budgeting and resource mapping, while the soil and water conservation app helped in planning various activities.

### **Good practices followed in implementation of PoCRA**

An online process had been implemented for PoCRA project activities, which includes the entire process from application to Direct Benefit Transfer (DBT). This had made the process transparent and farmers can track their application online and receive updates on its status. Subsidies are directly credited to farmers' accounts, helping with financial management. Additionally, a single farmer can apply for multiple PoCRA project activities.

## **Findings from KIs with Agriculture Supervisor**

During the CM-V Survey, we interacted with a total of 27 Agriculture Supervisors, including 4 from Amravati, 6 from Akola, 5 from Buldhana, 6 from Jalgaon, 3 from Washim, 2 from Yavatmal, and 1 from Wardha district.

### **Clusters and villages assigned under the project**

The project had assigned Agriculture Supervisors the responsibility of managing 02 to 03 clusters, each comprising approximately 10-25 villages.

### **Most effective activities of the PoCRA project**

The most effective activities observed in the PoCRA project were Sprinkler and Drip irrigation sets, which offer a subsidy of up to 80% and were credited within a short period of time compared to other projects.

### **Activities of PoCRA which are not working well**

Apiculture, Sericulture, NADEP, Backyard Poultry, and Forest Tree Plantations were not preferred activities due to lack of knowledge and awareness. In the Kharpan area, proper implementation of soil and water conservation activities according to slope and soil conditions was needed.

To encourage farmers to participate in activities such as Apiculture, Sericulture, NADEP, Backyard Poultry, and Forest Tree Plantations, there was a need to increase awareness and knowledge about the benefits of these activities. Additionally, in the Kharpan area, it was essential to implement appropriate soil and water conservation practices considering the slope and soil conditions to achieve maximum benefits.

### **Key reasons for rejection in pre sanction for individual benefits**

Incomplete applications and delays in submitting compliances were the main reasons for not receiving pre-sanction approval.

### **Activities with more complaints and frauds**

Initially, cases of fraud were reported in the Goat rearing activity, which led to its closure. However, there have been no such observations in any other activities of the project at present.

### **Actions to avoid such cases**

The cases are reported to the higher officials for necessary actions to be taken.

### **Common environmental issues observed in the area**

Excessive use of chemical fertilizers, insecticides, pesticides, and weedicide was a common environmental issue observed in the area. Farmers' lack of interest in soil testing and

inadequate awareness was also a contributing factor. Improper disposal of used containers of insecticide/herbicide and farmers' reluctance to adopt BBF and zero-tillage practices due to lack of knowledge were also noted.

There was a need for increased awareness and education on sustainable farming practices and proper disposal methods for chemicals to mitigate these environmental issues.

### **Status of Integrated Pest Management (IPM)**

The status of Integrated Pest Management (IPM) in the region includes seed treatment using Nimboli ark, installation of pheromone traps by farmers, and awareness creation to avoid using banned pesticides and insecticides. Additionally, awareness was being raised about the proper disposal of pesticide/insecticide containers.

### **Suggestions for Crop residue management**

In RoPA area, Soybean, Tur, Gram, and Cotton are major crops. The straw of Soybean, Tur, and Gram are used as cattle feed/fodder. Cotton stalks and residues can be processed for compost for agricultural use. Effective use of crop residues as fodder and compost can not only reduce waste but also improve soil health and animal nutrition in the RoPA area. Farmers should be encouraged to adopt such practices to promote sustainable agriculture.

### **Major challenges in activity implementation stage**

During the rainy season, spot verification was a significant challenge in the field, while non-provision of all related documents such as tax invoices by dealers, non-connectivity of geo-tagging, and non-embossing of pipes by dealers create issues during spot verification. The app should allow options for farmers to log in, and all submitted documents should be visible during spot verification.

### **Key challenges in implementing PoCRA activities**

- Frequent changes in project activity guidelines cause challenges during spot verification.
- Farmers were not interested in implementing community activities such as Graded Bunding, Nala Deepening, Community & individual Farm Ponds etc.
- In FFS activities, farmers are not interested to attend and women farmers' attendance was an issue.
- Common understandings among the members of SHG & FPC were not observed, leading to delays in activity implementation. Proper documentation was also not observed.

The challenges faced during spot verification, lack of interest in community activities, poor attendance in FFS activities, and improper documentation of SHG & FPC activities must be addressed for the successful implementation of the project. Proper awareness and communication among farmers and project officials could help improve the situation

### **Suggestions for improving the program implementation**

Suggestions for improving program implementation include arranging training and exposure visits for SHGs and FPCs, filling vacant positions of CAs, AAs, and Agriculture Supervisors, providing laptops to cluster officials for proper reporting, introducing advance payments or financial arrangements for farmers, restarting closed activities such as electric motor pumps, pipes, wells, and farm mechanization, and ensuring timely disbursement of subsidies.

### **Feedback on the various mobile based applications**

The apps used in the project are user-friendly, but poor networking issues cause problems with their functionality. Offline data collection may be allowed as a solution. Photos uploaded in the apps are not displayed properly after some time, causing issues during spot verification. It was recommended to reduce the number of documents required for uploading to avoid further problems.

The user-friendly apps have been useful in the project, but issues related to networking and photo display need to be addressed. The reduction of required documents could streamline the uploading process. Allowing offline data collection may also aid in raising the efficiency of the project.

### **Feedback to improve the capacity building trainings**

The feedback provided to improve the capacity building trainings are included in the suggestion to arrange proper residential training, particularly for staff involved in batch-II and III clusters, who were mostly trained online due to the pandemic. There was also a suggestion to arrange training on farm mechanization for Agriculture Supervisors, and to form a common supportive committee in villages where VCRMCs were not in place due to disputes. Further, it was suggested that changes in guidelines or GR should be provided in hard copies to cluster staffs on time.

### **Findings from KIIs with Cluster Assistant**

In the CM-V Survey, we conducted interviews with a total of 30 Cluster Assistants. Out of these, 4 were from Amravati, 7 from Akola, 6 from Buldhana, 6 from Jalgaon, 3 each from Washim and Yavatmal, and one from Wardha district.

### **Activities with Maximum Demand**

The activities with the highest demand from farmers were sprinkler sets, drip irrigation, PVC pipes, water pumps, individual implements, seed production plots, and horticulture plantations. This was largely due to the availability of water, which had led to increased demand for irrigation-related activities.

### **Reasons for ineligibility for DBT**

There were several reasons why farmers may be ineligible for Direct Benefit Transfer (DBT) programs. Poor financial conditions (inability to contribute margin), reluctance to participate in the horticulture plantations. Due to the delays in pre-sanctions, and low demand for irrigation-related activities in regions such as Amravati, Akola, and Buldhana are among these reasons. Additionally, landless individuals were excluded due to the closure of goat rearing activity and a lack of alternate options for participation.

### **Reasons for rejections of Individual grant applications**

Individual grant applications were rejected for several reasons, including a shortfall of required documents, land ownership exceeding 2 hectares, and a lack of permission to access canal water.

### **Key reasons for the delay in approval of individual grant**

The key reasons for delays in the approval of individual grant applications include a failure to fulfil the required documentation and submission of applications for activities that are currently on hold.

### **Reasons for not starting of Activities after Pre-Sanctions**

There are several reasons why farmers may not start activities after pre-sanctions. If pre-sanctions are not received before the start of the season, farmers may lose interest the sanctioned activities. Timely receipt of pre-sanctions was therefore essential. Additionally, a lack of availability of finance (beneficiary margin) may also prevent farmers from starting activities.

### **Reason for some of the activities not being taken up by beneficiaries**

Beneficiaries may not take up certain activities due to a lack of technical knowledge, conviction and assurance of the benefits of the activity. It was important to provide farmers with more technical guidance, field exposure and hand-holding activities such as sericulture, apiculture, shade net, and NADEP units to address this issue.

### **Feedback on the DBT application**

Although the application was user-friendly, poor network connectivity creates issues with data entry, photo capturing, and uploading.

### **Willingness regarding compost and NADEP unit for waste management**

Farmers were unwilling to undertake compost and NADEP unit activities due to inadequate subsidy provisions. They believed that the installation and implementation costs were high, while the subsidy provisions were insufficient.

### **Key challenges in implementation of individual activities**

The key challenges in implementing individual activities include the poor financial condition of farmers, which despite pre-sanction approvals, remains a major challenge. The provision for partial advance payments may help resolve this issue. Other challenges include low participation of women in FFS and other meetings, less participation of farmers in VCRMC meetings, and the compulsion to put desired activities on hold.

### **Approach on Community work in VCRMC meetings**

The Gram Panchayat and VCRMC had not taken any initiatives for the development of E class land, which was mostly encroached by villagers. VCRMC meetings have included detailed discussions on the availability of land and the implementation of activities, as well as actions to be taken against encroachment.

### **Current status of implementation of community activities**

Community activities have been conducted in major areas of the villages through *Jalyukt Shivar Abhiyan* and *Magel Tyala Shet Tale*. These activities include Nala Deepening and Widening, CNB construction and repairing, Graded Bunding, Gabion Structures, CCT and Graded Bunding. Detailed discussions on VDP/CDP had taken place in VCRMC meetings.

### **Key challenges in implementation of community level project activities**

The key challenges in implementing community level project activities include the unavailability of E-class land due to encroachment by villagers, which hinders the implementation of common activities. Farmers are not interested in implementing Graded Bunding and Farm Pond activities in their individual lands due to small landholding and water stagnation issues. The estimation, proposal preparation, and submission process at App was not user-friendly and creates problems in document submission. These challenges can be resolved with the help of GP and VCRMC by creating awareness among farmers regarding the importance of land development activities, and upgrading the NRM App.

### **Awareness of the environmental safeguards**

Awareness of environmental safeguards had been created among CA's, who were now well-informed about these measures. Farmers have also been educated about the importance of not cutting trees and additional planting on farm bunds. They were also aware of the minimum use of chemical fertilizers and were encouraged to increase the use of organic and bio-



fertilizers. Sowing of crops across the slope with the help of BBF, adoption of minimum or zero tillage farming, and integrated pest and insect management were also promoted among farmers.

### **Key challenges in implementing NDKSP activities**

The key challenges in implementing NDKSP activities include the non-availability of farmers in the village for registration, as some have moved their families to Tehsil or district. Additionally, there was a lack of interest among VCRMC and women members in participating in these meetings.

### **Other useful trainings and Suggestions**

Residential trainings on topics such as horticulture plantations, forest trees plantations, zero tillage technology, project information, and app handling were organized by RAMEITI in Aurangabad and VANAMETI in Nagpur. The trainings were found to be useful. There was a need for technical knowledge upgradation and app handling training for office staff.

### **Attending various online webinars/ trainings**

The Cluster Assistants had attended most of the online webinars and trainings conducted by the project, including training on the formalization of micro fruit processing, zero tillage technology, use of DBT, and various activities-based trainings for FPCs-SHG.

### **Findings from KIs with Sub Divisional Agriculture Officers (SDAOs)**

During CM-V, 11 checklists were completed through interviews with SDAOs from Akola, Jalgaon, and Washim districts, as well as one from Amravati, Buldhana, Wardha, and Yavatmal.

### **Reason for non-working of Project Strategies and Suggestions**

- SDAO Akola told that farmers are not interested in activities like Apiculture, establishment of Poly House, Well Recharging and Fish culture, as these were less profitable and not suitable for the region.
- Farmers were not interested in Graded Bunding activity due to small landholding, slope, and soil type. SDAO Amravati suggested for revision of CNB and Nala Deepening rates due to an increase in cost.
- SDAO Wardha had issued pre-sanction order for activities that were later closed due to changes in guidelines, affecting implementation.
- Highly demanded activities like PVC Pipes, Well construction, Motor Pump, and Farm Mechanization were closed in the project. Subsidy for NADEP activity was low, leading to a low response from farmers. Drip irrigation was essential for Horticulture plantation in the PoCRA project, but not compulsory in MREGS, affecting implementation.



### **Strategies adopted to increase the participation of women**

The project guidelines require the inclusion of at least 50% women members in the VCRMC and efforts are being made to improve participation of women in project activities. To increase the participation of women in FFS, efforts were made to hire females as project staff including as community agriculture extension workers (Krushi Tais) for interacting with female members of farm households as well as female farmers and project officials. Krishi Tais were engaged in making household visits/field visits and interactions with female members of farm households, female farmers to motivate them enrol in project activities. Further, enrolment of women farmers had increased through trainings by organisation focusing on Women Self Help Groups (WSHGs) such as Mahila Aarthik Vikas Mahamandal (MAVIM), Maharashtra State Rural Livelihood Mission (MSRLM), and Non Government Organisations (NGO)s officials. Women's Day was celebrated at the cluster level to increase women participation. Cluster officials and Krushi Tais provided information on various activities available for SHGs and encouraged them to avail the benefits. Female farmer centric activities at individual beneficiary level and group level (farm implements) were also taken up that reduce the drudgery of farm labourers involved in farm operations such as sowing, weeding, harvesting and post harvest management etc., by the project activities so that female labourers could benefit from the project activities enabling enrolment of more and more women farmers. The Government Order enabling Women Self Help Groups being eligible to take up benefits meant for group based activities including farm implements bank, financial assistance for supporting food processing activities and financial assistance for Farmer Producer Organisation/Companies. Further, the individual and group activities that are mostly performed or taken up general by female members like backyard poultry, goat rearing etc also helped the participation of women farmers in the project activities.

### **Suggestion from Experts for enhancing the enrolment of Women and Tribal Farm Households and Youth**

#### **Enrollment of Women Farmers:**

However, further efforts may be required to enhance the enrolment of more number of women farmers in taking up project activities including organising meeting with MAVIM and MSRLM teams at state level followed up by similar coordination meeting at district and taluka level to ensure that more and more women SHGs take advantage of the technical and financial resources available with the POCRA project are availed by the thousands of SHG members from the project districts ensuring farm based livelihoods to the women SHG members.

MAVIM or such similar organisations including NGOs or CSR wings of private companies or foundation/Trusts working in the predominantly tribal tehsils of the POCRA project areas could

be partnered with for reaching out to the poor tribal farm families for enrolling more and more number of small and marinal farm households in the project activities.

#### **Enrollment of Tribal Households:**

Further, special campaigns may be conducted in the tribal pockets for a month or couple of months by deploying additional manpower from the neighbouring taluks or districts. During these campaigns the taluks and village level staff would conduct the village level information/education activities and also provide intensive household level interventions providing information/ education to household members as well as provide handholding support to the farm households right from registration of households till they receive the benefits (received subsidy) and the benefits are put to use. Such an intensive household level outreach efforts is more likely to yield results rather than simple information and education campaigns.

In the tribal pockets, farmer households had expressed their inability to mobilise the finances required to meet the purchase/installation cost of the project activity. In the absence of ready willingness of the banks to lend money, the project may opt for 100% of subsidy in these tribal pockets or may partner with the NGOs/Trusts/CSR of companies/Foundations to meet the beneficiary contribution either through financial grants or through the other kinds of support so that farm households in the tribal pockets avail the benefits from the POCRA project.

#### **Youth Interventions:**

The project areas has a large number of youth population whose services could be channelized benefiting the program beneficiaries through skill development programs under Deen Dayal Upadhyay Grameek Kaushal Yojana (DDUGKY) of Ministry of Rural Development & Panchayat Raj, Govt implemented in the state by Maharashtra State Rural Livelihood Mission (MSRLM), Govt of Maharashtra or Pradhan Mantri Kaushalya Vikas Yojana (PMKVY) of Ministry of Skill Development and Entrepreneurship implemented in the state by Maharashtra State Skill Development Mission (MSSDM) of Department of Skill, Employment, Entrepreneurship and Innovation. The POCRA project may take up/coordinate with the DDUGKY team of MSRLM for taking up 4/6/9 month long placement linked skill development program in Agriculture and Animal Husbandry sector. The youth in the tribal pockets could be trained in job roles available under Agriculture Sector Skill Council including in the areas of Seed Industry, Soil Health Management, Post Harvest Supply Chain Management, Farm Mechanisation and Precision Farming, Agri Input Service Dealer etc,

#### **Skill Development Program in Agriculture and Allied Sector:**

Some of the private companies operating in Maharashtra or having their head offices in Maharashtra such as Tata (STRIVE), Larsen & Toubro, Tech Mahindra are running their own Skilling Centers and some of the companies working in the agriculture and food processing are hiring the manpower trained from these skilling centers funded through DDUGKY and

PMKVY. POCRA may develop partnership with these skilling programs of Govt of India/Maharashtra or big corporates operating the skilling centers in Maharashtra using their own CSR funds to help the rural youth find employment in the agriculture sector outside their farm and earn a decent living.

### **Activities to prevent Environmental Degradation**

At the sub-division level, steps were taken to ensure that no harm was caused to the environment. It was observed that in all 11 sub-divisions, no activities that could potentially harm the environment had been implemented.

### **Advantages of PoCRA project as compared to regular schemes**

The PoCRA project offered more activities for farmers and was transparent. It provided higher subsidy amounts as compared to other schemes and allows every member of the village to take advantage of the various activities. The entire process of application submission and sanctioning was done online, which enabled farmers to check their application status instantly. The project provided early benefits, and subsidy payments were made directly to farmers' accounts. SHGs and FPCs could apply for activities as per the norms, and a single farmer could apply for multiple activities simultaneously and receive the benefits.

### **Methods to increase awareness among farmers**

- Farmers were encouraged to shift towards horticulture plantations as these can be more profitable than seasonal crops. Adoption of NADEP unit could help to improve soil quality.
- Deferred applications were settled between September 17 to October 02, 2022, in all 11 sub-divisions.
- The establishment of VCRMC in every village was helping to create awareness through committee members, cluster officials, and social media. Pamphlets and leaflets have been distributed and training sessions were organized at the village level to educate farmers about the project guidelines and activities.

### **Activities that need to be changed**

- The beneficiary selection process for new well construction needs to be clearly outlined in the guidelines.
- There was a discrepancy in the time period for pre-sanction and activity implementation. The guidelines state one year, while present instructions received indicate 90 days.

### **Any complaints or irregularities observed**

According to the SDAOs, there were no complaints or irregularities reported in any of the project activities to date.

### **Key challenges in implementing PoCRA activities**

- NRM works were not carried out as sanctioned, resulting in unutilized funds in most clusters.
- Common land was not available for community farm ponds.
- SHGs faced difficulties in setting up ventures due to lack of share capital and audit reports.
- Diverting farmers towards climate-friendly practices was a major challenge as farmers prioritized subsidy-based aspects over climate-friendly practices.
- Working capital was needed for group value addition activities, which was not widely available.
- Gypsum was not available for soil reclamation in Kharpan area for FFS host and guest farmers.

### **Suggestions to improve the program implementation**

- Provide revolving fund or share capital at lower rates to farmers, SHGs, and FPCs. FPCs could utilize Bank Guarantee offered by NABSANRAKSHAN against bank loan upto 2 Crores.
- VCRMC members should create awareness among farmers for project activities through social media.
- Release activities on hold as soon as possible.
- Tie-up with local bank branch for finance of shortfall in margin can be explored.
- Increase of more than 75% subsidy for shade-net activities.
- Encourage farmers to participate in activities like BBF, SRT, and horticulture plantations.
- Distribute pamphlets and leaflets to raise awareness and conduct training on project activities at the village level.
- Motivating farmer/ stakeholder by sharing success stories/ exposure visits to successful interventions in nearby areas.

### **Farmer requirement for agro-met advisory services**

- Farmers need more information on pests, diseases, and post-harvest management through agro-met advisory.

- Providing farmers with information on market rates and access to markets can help them sell their products effectively.

### **Feedback on the capacity building by NDKSP/ PoCRA project**

- Trainings should be conducted at taluka or village level for easier participation.
- Farmer exposure or study tours should be tailored to meet their needs.
- Training on new technologies for processing agri. produce should be provided to farmers and cluster team members.

### **The status of implementation of Community/NRM activities**

- In Akola district, due to salinity in 70% of the area, fewer community activities implemented, and some approved proposals were facing delays in the e-tendering process.
- In Amravati district, only 20% of the works were carried out against the sanctioned works in MLP due to farmers' unwillingness to follow the guidelines, leading to unfinished work.
- In Jalgaon district, the NRM works plan and estimate were prepared, and the remaining works would be done in the summer season.
- In Yavatmal district, 50% of the NRM works were carried out, and the cost had been incurred against the sanctioned amount. The approval process for second and third-Phase clusters was still in progress.

### **Reasons for delay in implementation of Community/NRM activities**

- The E-Tendering process, getting consent from farmers, preparing estimates and receiving technical approval took more time and affected implementation of activities.
- The online process of NRM activities caused difficulties in app and in uploading of documents, leading to delays.
- All processes of NRM activities should be done at the district level office to complete the process on time.
- Selecting contractors and implementing activities within the allotted time was also a challenge.
- The rate list for CNB activity needed to be revised.

### **NRM activities most recommended by VCRMCs**

The VCRMCs commonly recommended Graded Bund, Individual Farm Ponds, and Nala Deepening and Widening as the primary NRM activities.

### **Key challenges in implementation of community level (NRM) project activities**

Farmers' lack of interest in Graded Bunding and Farm Ponds due to small land holdings, challenges in estimate preparation, e-tendering, approval and implementation within allotted time, the limited time period for activity completion during February to May when fields were occupied with ongoing crops, and difficulties in uploading estimates and other documents in Apps, which were not user-friendly and took more time.

### **Environmental and Social Safeguards under the project**

Regular trainings and awareness campaigns can be held at the village level to create awareness about environmental and social safeguards under the project. The VCRMC meetings and FFS can also help ensure these safeguards, as well as interactions between cluster officials and villagers.

### **Adequacy of staff for project implementation at SDAO level**

- The workload of Cluster Assistants handling 14-15 villages should be minimized for better efficiency.
- Vacant positions of Agri. Assistants and Supervisors should be filled to reduce dependency on contract workers and improve efficiency.
- A Technical Coordinator position was created to support planning and implementation of activities.

### **Suggestions for making the implementation more effective**

- Farmers involved in Sericulture activity need proper guidance and training to maximize benefits.
- A comprehensive Village Development Plan (VDP) should be prepared with the participation of villagers, Sarpanch, Krushi Tai, and cluster officials, incorporating all activities and aspects (as recommended by SDAO, Amravati).
- Proper planning and monitoring by VCRMC are necessary for successful implementation of activities.
- Project should provide Gypsum as a soil improver to farmers in the Kharpan area on subsidy.
- A contingency fund should be established to benefit the beneficiaries, and subsidy should be released promptly to Drip, Sprinkler, and Shade net house beneficiaries (as recommended by SDAO, Mehkar).
- Optional site inspections prior to pre-sanction could avoid delays in the process, as currently, all processes of NRM activities, such as estimate and document submission, were online, which takes more time. It was also suggested that data

feeding and corrections in estimates be allowed offline (as recommended by SDAO, Washim).

- Community activities should be implemented on E-class land. However, provisions should be made to implement these activities on private/farmer's land if E-class land was unavailable.
- Revised guidelines require SHGs and FPCs to have at least one-year-old audited statements to apply for the PoCRA project. This condition should be relaxed to benefit more SHGs and FPCs.
- Innovative activities/ideas should be included in a separate plan prepared at the district and Taluk levels.
- A technical person should be recruited at the district level.

### **Findings from KIs with Taluka Agriculture Officer (TAO)**

During the CM-V Survey, a total of 25 checklists of TAOs were completed, with 6 TAOs from Akola district, 4 TAOs each from Amravati and Buldhana districts, 3 TAOs each from Washim and Yavatmal districts, and 1 TAO from Wardha district being interviewed.

### **Major challenges faced during the pre-sanction stage**

- Due to a large number of applications, spot verification becomes challenging, causing delays in pre-sanctions and process implementation.
- To address this issue, it was recommended to hand over the spot verification of some activities to the Circle Agriculture Officer (CAO).
- Updating 7/12 on time was an issue because once it was added to PoCRA, there was no other option for adding another 7/12.
- The lack of Aadhaar link for the applicant was a major problem, making it difficult to provide benefits to farmers within the stipulated time.

### **Issues related Guidelines for all project activities**

- Revisions made on individual mechanization activities should be communicated to the Taluka level for timely implementation.
- Mini Sprinkler provision should be made under Horticulture plantations.
- Clear guidelines were needed for the establishment of organic units.

### **Addressing complaints and cases of irregularities**

There were no complaints or malpractices reported during implementation at the Taluka level. Efforts were made to prevent malpractices by providing guidance to the Cluster Assistant, Agri. Assistants and Agri. Supervisors through personal visits and meetings. All documents



and spot verifications were done by Agriculture Assistants, Agriculture Supervisors and Circle Agriculture Officers.

### **Key challenges in implementing PoCRA activities**

- Farmers were not interested in NRM activities in saline areas, so increasing the subsidy amount was suggested to make it more popular.
- The farmers in saline areas had fewer wells, making it difficult to sanction micro irrigation activities.
- Fewer applications were received for individual Farm Pond due to the total cost being higher than the sanction amount, so increasing the subsidy was recommended.
- Farm-level disputes about boundaries result in incomplete Graded Bunding activity.
- Subsidies for Compost unit and NADEP activity are low, resulting in low farmer participation.
- Providing up to 90% subsidy for small and marginal landholding farmers would increase their participation.
- Increasing the number of Wells constructed per village would increase the irrigated area, yield, and income of farmers.
- Organic fertilizers are necessary for the reclamation of soil in saline areas, so providing NADEP units on 100% subsidy was recommended.
- CSR rates for Farm Ponds need to be updated and revised.

### **Farmer willingness to adopt new CRT under PoCRA**

The farmers were enthusiastic about utilizing new climate-friendly technologies provided by PoCRA. They were interested in adopting seed selection based on soil type, Farm Ponds, and BBF Sowing Machines. The farmers were keen to use new climate-friendly technologies from the PoCRA project and were also interested in seed production to improve their financial status. Various individual components such as Drip irrigation, Sprinkle irrigation, and Horticulture Plantations were gaining a positive response from the farmers.

### **Implementation of Environmental and Social Safeguards under the project**

- The project had created awareness about environment and social safeguards.
- Organic farming should be encouraged with proper guidance to reduce chemical fertilizer and pesticide usage.
- BBF technology for sowing had shown good yield even in excess rainfall condition.
- Soil and water conservation work had increased cropping intensity.
- Horticulture plantations have generated employment at village level.
- Priority was given to trees and bamboo plantations on bunds.



- FFS activities had created awareness about organic farming and integrated pest management.

### **Feedback to improve the capacity building trainings by PoCRA**

- Farmers and cluster staff need for the individual and group-level training.
- Training should be arranged for environmental study and SRT technology, and exposure visits should be planned.
- Capacity building training should be provided to women farmers, and expert trainers for FFS should be made available.
- Provision of contingency funds at the taluka level will help in better implementation of the project.
- Seed production activity should be implemented in every project village.
- Women and male farmers self-help groups should be empowered by providing guidance and business ideas.
- Field staff needs to be trained in implementing soil and water conservation treatments.
- Activities assigned to SHGs/FPC should be visible at the taluka level.

### **Findings from KII with DSAO/PD - ATMA**

During CM-V visits, Team Leader & team members had interacted with 06 DSAOs & PD-ATMAs. DSAO & PD-ATMA of Wardha District were not available.

### **Project activities of PoCRA that were not working well**

Comments from DSAOs on district-wise project strategies:

- Akola District: The activities carried out in the project were intended to achieve climate resilience, but we needed to focus more on this goal. We needed to improve the activities related to soil reclamation, as well as the capacity and knowledge of FFS facilitators. We also needed to work on convincing farmers to adopt climate resilient activities.
- Amravati District: We hadn't been providing some activities such as Gypsum application, Farm Mechanization, Water Pump and Pipes as per the requirements of farmers. We needed to promote farmers' SHGs and FPCs.
- Buldhana District: We had received fewer proposals from SHGs and FPCs, and land availability for implementing activities was a major concern for them.
- Jalgaon District: Closed activities such as Water pump, Pipes, and Farm Mechanization should be made available for farmers. The condition of audited statements for one-year-old FPCs should be removed.

- Washim District: We had implemented activities according to project guidelines, but we needed to ensure that farmers were using these efficiently.
- Yavatmal District: Project activities were useful and were being implemented, but we needed to use them more efficiently to achieve a climate resilient approach.

### **Strategies to Increase Participation of Women and Marginalized Sections**

- In Akola district, detailed information about project guidelines and activities available for women and marginalized sections was provided to villagers in meetings and through Krushi Tai. Women and villagers were encouraged to submit applications to access these activities.
- In Amravati district, Chikhaldara and Dharani Tehsils had a high population of tribal families. To improve participation from these communities, a local person was included in the project implementation team to interact with the villagers. DPIU team and SDAO office cleared applications from SHGs and FPCs after completing the required documentation.
- In Buldhana district, due to the critical financial conditions of farmers, expected targets were not achieved. Cluster team members tried to motivate farmers to increase participation.
- In Jalgaon district, cluster team members regularly interacted with women and marginalized sections such as SC/ST, small farmers, and widows to encourage participation in the activities.
- In Washim district, Krushi Tai interacted with women and cluster team members interacted with marginalized sections such as SC/ST, small farmers, and widows to encourage participation in project activities.
- In Yavatmal district, cluster team members regularly interacted with women and marginalized sections such as SC/ST, small farmers, and widows to encourage participation in project activities. Team members also interacted with Project Office, MAVIM, and UMED project officials for activity conversion.

### **About understanding the Project Guidelines**

- DSAO from Akola had revealed that changes in the guidelines for SHGs/FPCs had created problems for beneficiaries. Even though they had completed all the requirements and applied for the activities, some applications had been rejected as per the revised guidelines.
- According to DSAO from Amravati, project guidelines were specific to each activity. However, the project guidelines do not mention what should be done if the implementation verification report was not available for CHC. Similarly, it was unclear

whether estimates for Godown construction could be prepared as per ESSR of FCI or any other norms.

- DSAOs from Buldhana, Jalgaon, and Washim had reported that project guidelines were clear and activity specific.
- DSAO from Yavatmal had pointed out that project guidelines were frequently changed for Agri. Business activities. It was recommended that changes should be made only once and clearly mentioned in the guidelines.

### **Activities with more complaints**

- During the visit to CHC in Akola district, some instances of duplication were observed, and all the implements were not found at the designated place. The responsibility for such irregularities should be fixed on the FPC directors.
- No irregularities were observed in any of the cases in Amravati district.
- Initially, some cases of irregularities were observed in goat rearing activities in Buldhana district. Additionally, there were problems with the NRM portal, which needs to be improved.
- No irregularities were observed in any of the cases in Jalgaon, Washim, and Yavatmal districts.

### **Action taken to avoid such cases**

- During a visit to CHC in Akola district, some duplications were observed and all the implements were not found at the designated place. DSAO Akola has recommended fixing responsibility on FPC directors, which can be marked on the 7/12 documents of the directors.
- No irregularities were found in Amravati district.
- In Buldhana district, some irregularities were initially observed in Goat rearing, and appropriate actions were taken against the offenders. However, no such cases were observed.
- No irregularities were found in Jalgaon, Washim, and Yavatmal districts.

### **Key challenges in implementing PoCRA activities**

- In Akola district, the implementation of community activities was a major challenge due to the predominance of kharpan villages. Challenges had also been faced in the implementation of individual activities such as Apiculture, Sericulture, and Backyard Poultry, particularly in conducting Farmer Field Schools with the participation of the same farmers during the season. However, the team had not faced any challenges in implementing FPOs/SHGs activities.

- In Amravati district, all activities had been implemented as per project guidelines, and hence no challenges have been faced in the implementation of individual or community activities. However, PD-ATMA had noted that poor financial conditions of the SHGs/FPCs and a lack of support from financial institutions posed a significant challenge to the implementation of the activities.
- In Buldhana district, farmers had shown less response to micro-irrigation individual component implementation due to an increase in rates, causing a problem in the implementation of the said activity. To address this issue, promoting the community farm pond activity among the farmers was necessary.
- In Jalgaon district, some DBT recommendations for individual beneficiaries in Drip Irrigation cases were pending due to the delay in registering new dealers. Farmers have shown less interest in community activities, but there had been a favorable response from SHGs. Very few FPCs had applied for the activities in the district.
- In Washim district, individual activities had been implemented for eligible beneficiaries as per the received applications. However, community activities had not gained much interest among villagers, even though they needed to be implemented on common land. SHGs and FPCs activities have been implemented in the district.
- In Yavatmal district, allowing farmers to benefit from closed individual activities was suggested. Graded Bunding activity was carried out in some Phase-I and II villages under community activities. Demand had been received for construction of CNB, Nala Deepening, and Widening. Guidelines for the Agri-business component needed to be more clearly defined. SHGs and FPCs activities had been implemented in the district.

### **How to address the challenges?**

- DSAO Akola recommended that a qualified FFS facilitator, who had personally practiced climate resilient technologies, should be appointed to provide proper guidance to farmers during FFS sessions.
- In Amravati district, DSAO reported no major challenges encountered during activity implementation. However, PD-ATMA suggests developing linkages with financial institutions through DPIU to support SHGs/FPCs financially.
- Increasing organic carbon in soil was an essential task in Buldhana district, and training should be provided to various groups as part of capacity building.
- According to DSAO Jalgaon, group activities were challenging, while individual activities were successful, and cluster team training should be provided.
- DSAO Washim reported that the project was transparent and efficiently functioning in various aspects, and no implementation challenges was observed.

- In Yavatmal district, DSAO suggested releasing activities on hold to farmers to enable them to benefit from them.

### **Status of implementation of Community/NRM activities**

- Due to the kharpan area, most farmers in Akola district were not interested in implementing NRM activities. However, in some villages, farmers have responded positively and NRM activities have been implemented.
- In Amravati district, NRM activities have been implemented in a limited number of villages. Most villages in Bhatkuli, Daryapur, Amravati, and Anjangaon Surji were located in kharpan area, hence there was a very limited scope for implementing NRM activities.
- The NRM portal was expected to be user-friendly, but operational issues were causing problems in the implementation of NRM activities in Buldhana district, leading to delays in work.
- In Jalgaon district, GB and Nala Deepening works had been implemented in PoCRA project villages.
- Estimates for community activities had been prepared and submitted for continuing NRM works in Washim district.
- In Yavatmal district, 254 works had been completed in phase-I villages, while preparation, submission, and receiving technical sanctions of community works of phase-II and III villages were underway.

### **Reasons for delay in implementation of Community/NRM activities**

- Most of the project villages in Akola district were located in kharpan areas, and as a result, farmers were generally not interested in implementing NRM activities. While some farmers were willing to construct individual Farm Ponds, there were limitations due to small land holdings, as revealed by the DSAO.
- In some clusters in Amravati district, there was no availability of sites for implementing CCT and CNB, and the e-tendering process and kharpan areas are causing delays in the implementation of NRM activities, as reported by both DSAO and PD-ATMA.
- According to the DSAO in Buldhana, there was a need for revision in the NRM portal as it was consuming more time and causing unnecessary delays.
- Due to COVID-19, the entire process of NRM planning, sanctioning, and implementation was delayed, as reported by the DSAO, Jalgaon.
- In Washim district, vacant posts of officials due to COVID-19 were one of the reasons for delays in the implementation of NRM activities, according to the DSAO.

- As reported by DSAO, Yavatmal, due to COVID-19, vacant posts of officials and non-sanctioning of VDP were causing delays in the implementation of NRM activities in Yavatmal district, as reported by the DSAO.

### **NRM Activity most recommended by VCRMC**

The VCRMCs in the districts had mostly recommended activities such as Graded Bunding, Farm Ponds, CNB, Mati Nala Bund, Recharge Shaft, and Nala Deepening and Widening.

### **Challenges in implementation of community level (NRM) project activities**

- A major challenge in implementing NRM activities was the unavailability of E-class land in villages due to encroachments.
- Community activities were being hindered by village-level disputes among farmers, but we could attempt to resolve them through dialogue with the villagers.
- The implementation of community activities was challenged by hard strata and shallow soil depth.

### **Awareness about Environmental & Social Safeguards**

The DSAOs of six districts had observed that farmers had some awareness about Environmental & Social safeguards, but further efforts were needed to ensure effective implementation of project activities.

### **Feedback on the capacity building of the NDKSP/ PoCRA project**

- According to the DSAO in Akola, more field demonstrations should be organized to improve the capacity of farmers. These demonstrations should be held once every three months.
- The DSAO in Amravati suggested that arranging proper training at the right time would be more effective in implementing activities.
- The PD-ATMA in Amravati believed that providing training on business-oriented activities could help Gat/FPCs streamline their business.
- The DSAO in Buldhana suggested that conducting FFS was the most effective tool for improving farmers' capacity and creating awareness about project activities. To conduct FFS more effectively, funds should be allocated for Agri. Asstt.
- The DSAO in Jalgaon observed that FFS and activity-based training were effective for enhancing capacity building among farmers.
- The DSAO in Washim reported that activities are implemented more efficiently due to the arrangement of training.

- The DSAO in Yavatmal recommended that prior training should be arranged for individual activity beneficiaries to enable efficient handling of activities.

### **Requirement of further trainings**

- To ensure effective implementation and functioning of activities, it was recommended that skill-based and activity-based trainings be arranged for beneficiaries.
- Farmers could benefit from exposure visits and demonstrations.
- Beneficiaries would benefit from trainings on processing, forward linkages, fishery, poultry, and packaging.
- Specialized training should be arranged for SHG/FPC members on bookkeeping, record maintenance, processing, and marketing.
- Project officials would benefit from training on new technologies and activity handling.

### **Suggestion to make implementation more effective**

- We should prioritize the implementation of climate-resilient technologies over other subsidized activities. The project was transparent, and various activities had been incorporated to benefit farmers. If these activities were implemented correctly, they would surely make an impact on farmers, as revealed by DSAO, Akola.
- Activities that are on hold should be released to benefit farmers. Proper manpower needed to be provided, and more well construction activities should be made available on a village-wise basis. Training should be arranged for cluster officials on specific NRM activities in the Kharpan area, and gypsum should be provided to farmers, as revealed by DSAO, Amravati.
- According to PD-ATMA, Amravati, if the condition for a one-year-old audited statement was cancelled, more Gat & FPCs will participate in availing activities. Poultry shade activity should be included in the activity list. Farm Mechanization activity should be added, and micro-irrigation activity may be included as a business activity for the Gat/FPCs.
- We should focus on storage and cold storage structures activities now. More master trainers should be trained to improve the capacity of beneficiaries. Handholding support was needed to prepare the DPR. Proper training and guidance were required for the Gat/FPCs about their business activities, as revealed by DSAO, Buldhana.
- We should give more focus on individual activities, as group activities had created conflicts among farmers, as revealed by DSAO, Jalgaon.
- Provision of advance amount for the activity set up in case of Gat/FPCs should be made, as the investment was large. If this arrangement was available, more activities would be implemented efficiently, as revealed by DSAO, Washim.



- The project was transparent and beneficial for farmers. It should be implemented more efficiently to achieve the expected impact, as revealed by DSAO, Yavatmal.
- DSAO, Wardha, had not shared his observations.

## Participation in Training and Awareness of Project Activities

### Exposure to outside PoCRA training

Respondents were also asked if ever they had participated in any exposure visit (outside their village) which had been organized under PoCRA project; 90 percent said they have not participated in any exposure visit conducted outside their village.

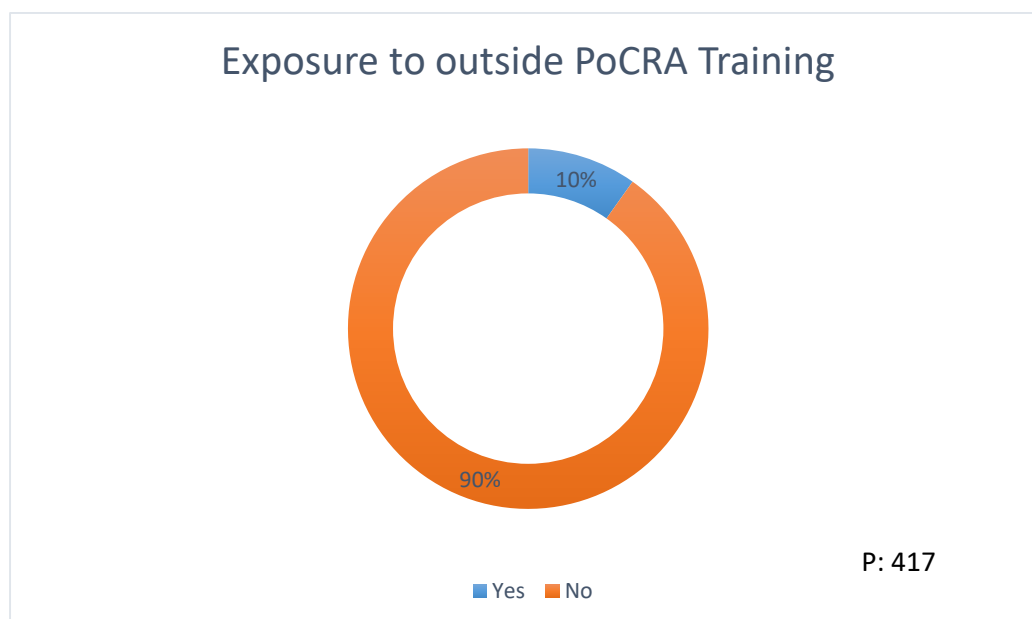


Figure 12: Exposure to outside PoCRA Training

### Training provided by PoCRA

When questioned about attending any training provided by PoCRA, 95 percent of the respondents said they have not no such trainings had been provided, while 5 percent said they had attended. The data suggests that a vast majority of the respondents (95%) have not attended any training provided by PoCRA, while only a small percentage (5%) have attended such training. This finding may indicate a need for greater outreach and promotion of PoCRA's training programs to ensure that more stakeholders are aware of and able to take advantage of these opportunities. It was also worth noting that while the percentage of respondents who have attended PoCRA's training was low, it was still significant, and suggests that these programs have had some impact in building the capacity of certain stakeholders. Overall, it was important for PoCRA to continue to assess the effectiveness of its training programs and



to explore ways to expand their reach in order to maximize their impact on the communities they serve.

### Visiting YouTube channel or Facebook page of PoCRA Project

While responding to question on visiting the Youtube channel or Facebook page of PoCRA project, only 38% responded affirmatively, while 62% said they never visited these social sites of PoCRA. The data suggests that a relatively small proportion of respondents (38%) have visited the YouTube channel or Facebook page of the PoCRA project, while a significant majority (62%) have not visited these social sites. This finding may indicate a need for greater promotion and outreach on these platforms in order to increase engagement with stakeholders and raise awareness about the project's activities and impact. It was also possible that some respondents may not be aware of the PoCRA project's social media presence, highlighting the importance of effective communication and promotion strategies to ensure that stakeholders are aware of and able to access relevant information through these channels. Overall, the data underscores the importance of leveraging social media as a tool for engagement and outreach in development projects, and highlights the need for ongoing efforts to optimize these platforms for maximum impact.

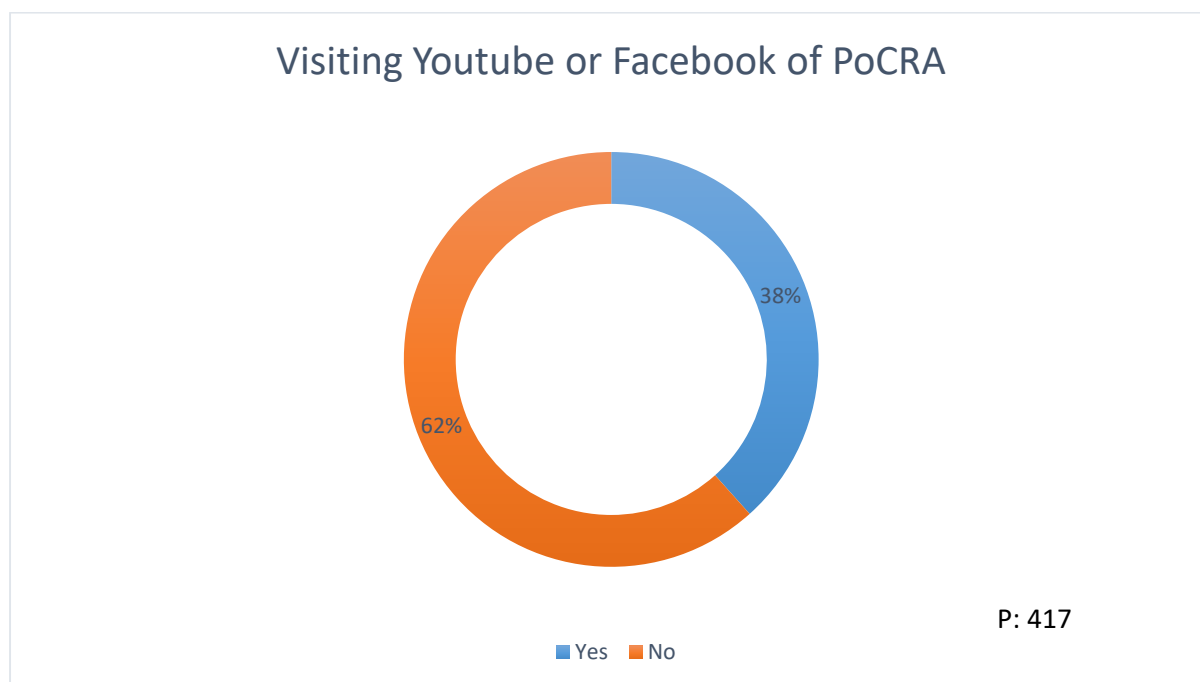


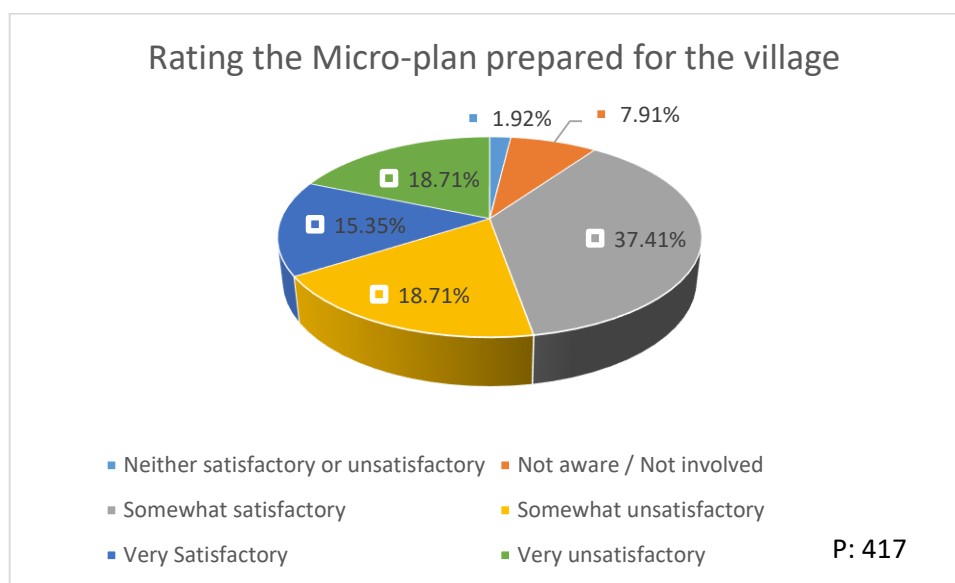
Figure 13: Visiting Youtube or Facebook of PoCRA

### Awareness on Micro-plan and Water Budgeting

The survey data suggests that there was some variability in the level of satisfaction among respondents with the micro-plans prepared for their village. While a relatively small proportion

of respondents (15%) reported being "very satisfied" with their village's micro-plan, a larger percentage (37%) were "somewhat satisfied." However, it was important to note that a significant proportion of respondents (19%) indicated that they were not satisfied with their village's micro-plan.

This finding suggests that there may be room for improvement in the development and implementation of micro-plans in order to better meet the needs and expectations of local communities. Overall, the data highlights the importance of ongoing evaluation and feedback to ensure that micro-planning initiatives are meeting their intended objectives and addressing the needs of all stakeholders.



*Figure 14: Rating the Micro-plan prepared for the village*

The survey data suggests that there was a low level of awareness among respondents about the water budgeting process conducted in their village. The vast majority of respondents (87%) indicated that they were not aware of this process, while only a small percentage (13%) responded positively. This finding highlights the need for greater awareness-raising efforts and communication strategies to ensure that stakeholders are informed and engaged with water budgeting initiatives. It was also possible that some respondents may not fully understand the concept of water budgeting or its potential benefits, underscoring the need for clear and accessible information and educational resources to help build understanding and support for these initiatives. Overall, the data suggests that there was a significant opportunity to improve awareness and engagement with water budgeting processes in order to maximize their impact on water management and conservation efforts.

With regard to question asked on awareness of any village level micro-planning on watershed management conducted in their village, based on the response, it can be concluded that the majority of the respondents, 77%, were not aware of any village level micro-planning on watershed management conducted in their village, while only 27% said they were aware of such planning. This suggests that there was a need to increase awareness among the community regarding the importance of watershed management and the measures taken by the local authorities for its effective implementation. Further efforts could be taken to educate and engage the community in micro-planning for sustainable management of water resources in their village.

### Family participation in micro plans

The beneficiaries of the PoCRA project were surveyed regarding their involvement in the development of their village's micro-plans. The results indicate that 45% of the beneficiaries reported their participation in the development of the micro-plans, while the remaining 55% did not participate. It was unclear from this result, what factors may have contributed to the differences in participation rates. Further investigation may be needed to determine whether there are any patterns or trends among those who participated and those who did not.

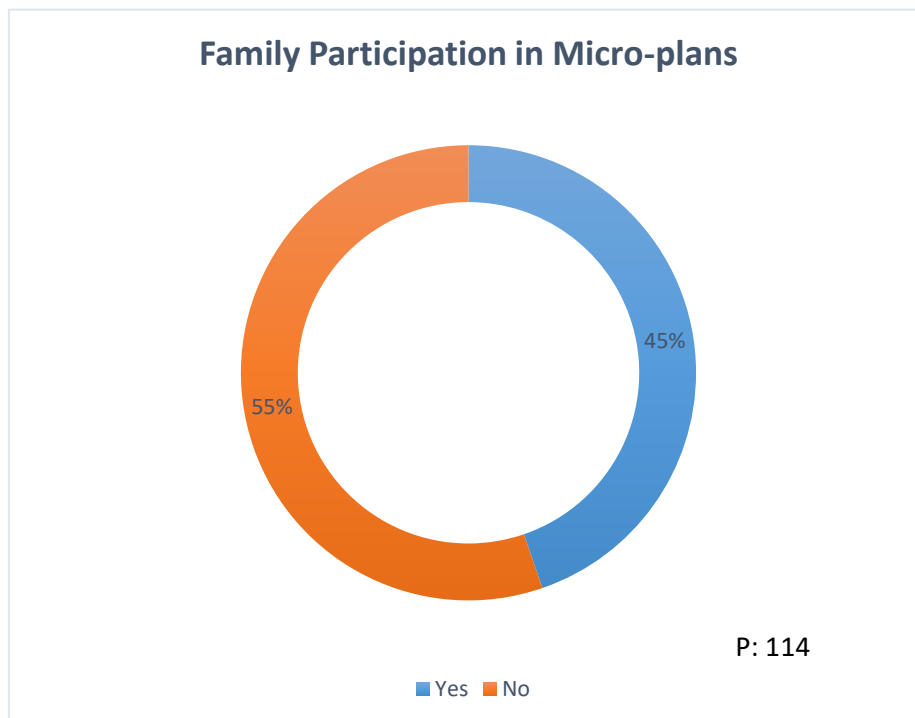


Figure 15: Family Participation in Micro-plans

Based on the responses received about water budgeting application used in the micro planning process, it appears that a significant majority of the respondents found the water budgeting application useful in the micro planning process. Specifically, 25% of respondents rated the application as "very useful," while 47% rated it as "useful." However, a sizeable proportion of the respondents (26%) indicated that they were not aware of the application, which suggests that there may be a need for more awareness-raising efforts to promote the use of this tool in the micro planning process. Overall, while the majority of respondents found the water budgeting application useful, it was important to continue to educate and inform stakeholders about the benefits of this tool in improving water management practices.

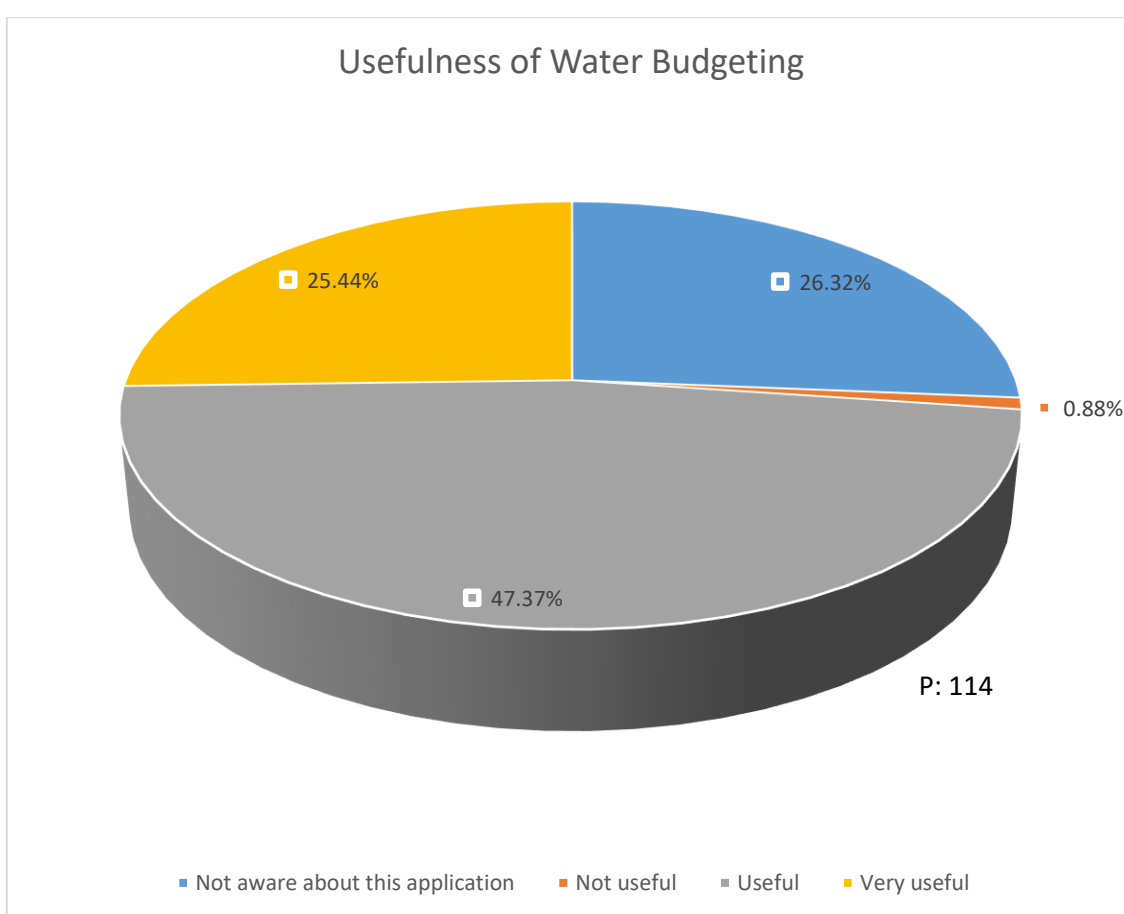


Figure 16: Usefulness of Water Budgeting

### Representation of all sections of society in VCRMC

As a part of Survey it was asked about their thought if VCRMC committee members represent all sections of society in your village, 64% replied it represents members from all the sections of the society, while 13% were not aware of it at all.

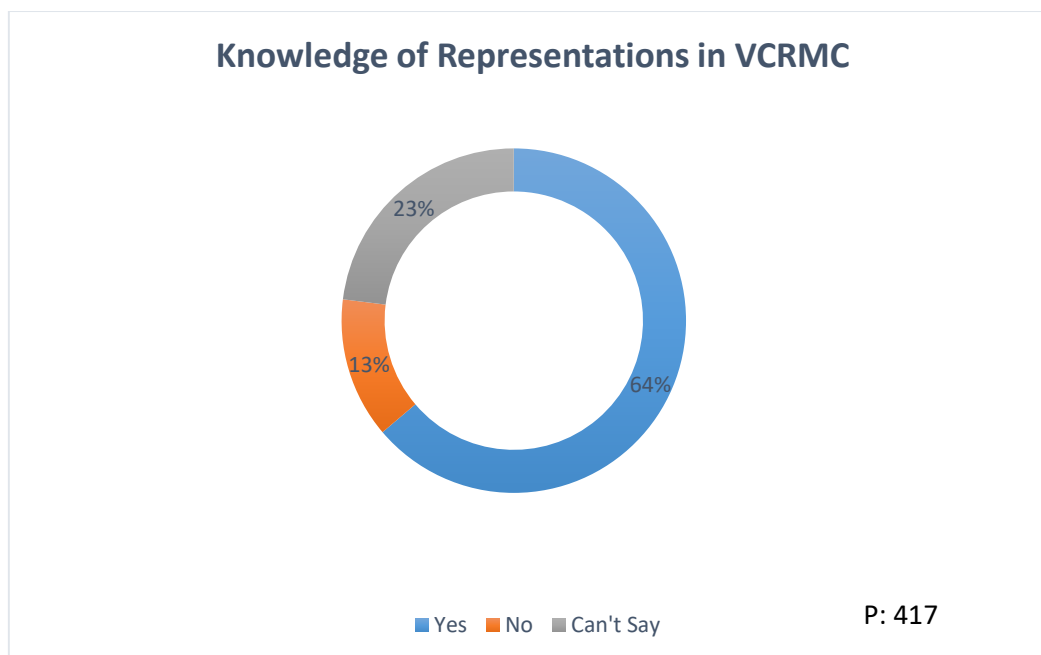


Figure 17: Knowledge of Representations in VCRMC

### Awareness on presence of grievance box in Panchayat office

As far as awareness about the grievance box for PoCRA Project at Panchayat Office, the results of the survey indicate that the majority (60%) of the respondents replied negatively, meaning they were not aware of the presence of the grievance box. However, 40% of the respondents stated that they were aware of the existence of the grievance box.

### Complaints through grievance box

Based on the on the questionnaire to determine the usage and effectiveness of the grievance box for the project issues. The results of the survey (P:168) indicate that only a small percentage (4%) of the respondents had utilized the grievance box to file a complaint about any project issues. The overwhelming majority (96%) of the respondents had not complained through the grievance box.

### Resolving the complaints

Furthermore, the study revealed that a significant portion of those who had complained through the grievance box (83%) stated that their complaints had not been resolved.

## 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 Agricultural Practices

### Landholding Pattern

Understanding the impacts of climate change on small householding and developing appropriate adaptation strategies are critical issues in Rest of the Project Area, a region where small-scale agriculture is central to economic development, food security, and local livelihoods. In CM-V Survey, out of the total interviewed 480 beneficiaries from Project villages, the percentage of small household holding is 1 to 2 hectares of land was 37 percent, while 21 percent farmers came under the bracket of Marginal household less than 1 ha of land. The farmers with Medium household (Land with a range of 2 to 10 hectares) were 34 percent. While the households with more than 10 hectares land holding were about 1.7 percent in the project and minimal 0.42 percent in the control areas (Referred by agriculture Census)

The landholding data collected from 240 samples from Control villages showed 42 percent farmers came under the bracket of small farmers, having landholding in between 1 to 2 hectares. Climate change poses a significant threat to smallholder farmers and threatens to undermine global progress toward poverty alleviation, food security, and sustainable development.

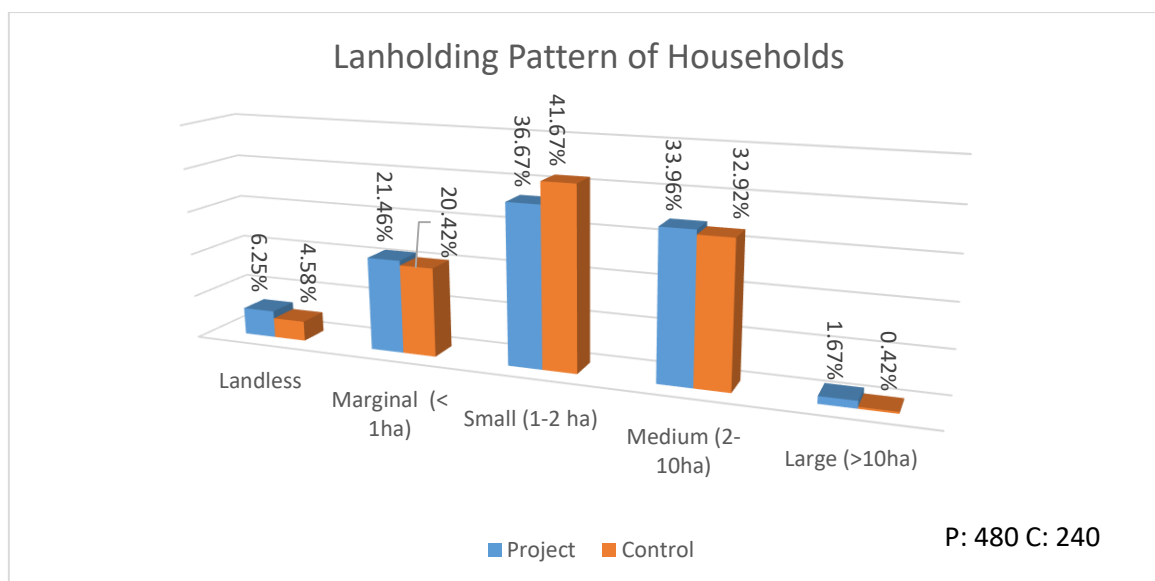


Figure 18: Landholding Pattern of Households

### Average Landholding

With total land holders it was found that average landholding was 2.06 ha in Project villages and 1.85 ha in Control. Among these 305 respondents from Project and 177 said that they have irrigated lands.

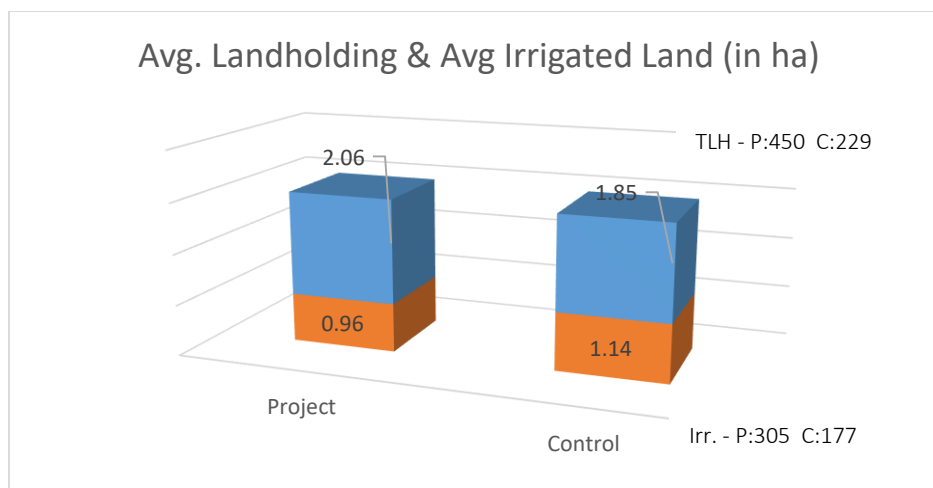


Figure 19: Average Landholding and Irrigated Land (ha)

### Cropping Pattern

The following graph clearly shows the cropping pattern observed during CM-V Survey. In *Kharif* season, Cotton occupied highest in Project villages as it was preferred by 54 percent of beneficiaries, while it was only 44 percent in Control villages. However, Soybean was more preferable in Control Villages as it was reported by 63 percent of beneficiaries, while in Project the response was only 53 percent. Pigeon Pea occupied the third position with 27 percent beneficiaries in Project Villages and 19 percent in Control. The pulse crops Green gram and Black gram had very preference in these villages with 1.4 percent from Project beneficiaries named Green gram and 0.9 percent said they had grown Black gram. Similarly, 1.3 percent beneficiaries from Control villages preferred green gram and 0.4 percent Black gram.

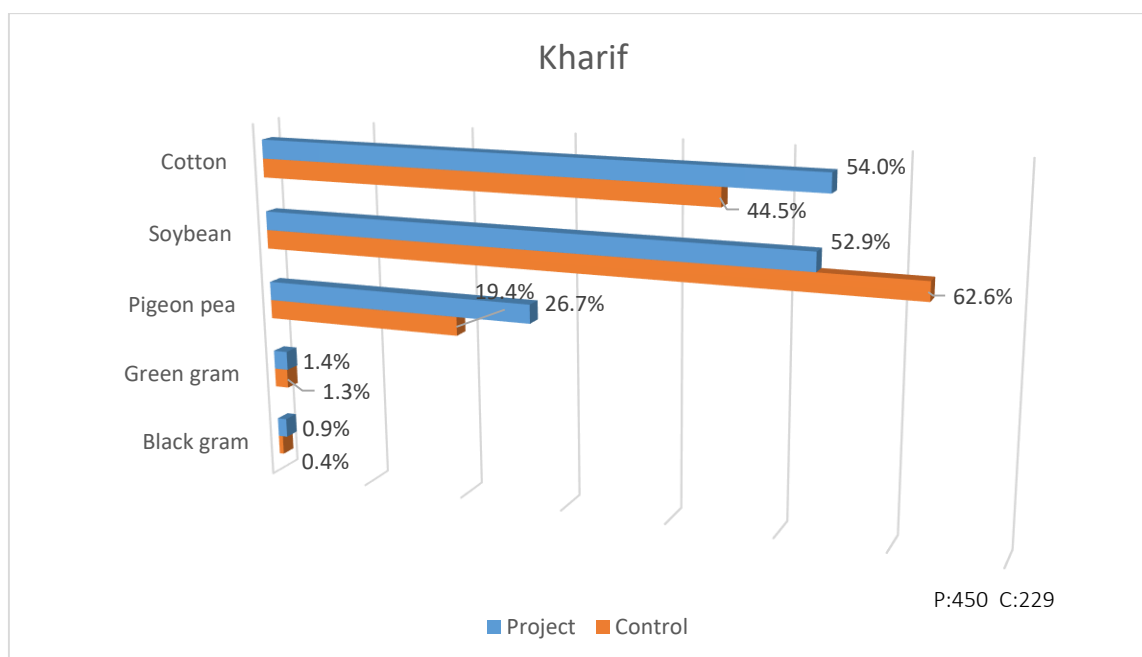


Figure 20: Major Kharif Crops

As per CM-V Survey data, Chickpea happened to be most preferable crop during *Rabi* season covering 78 percent in Control villages and 74 percent in Project. Wheat occupied the second with 19 percent beneficiaries from Control villages growing this crop following by 16 percent beneficiaries from Project Villages. *Rabi* season Maize occupied the third position with Project area occupying 12 percent area and Control villages 10 percent. Onion occupied 5 percent villages in Project and 4.2 percent in Control villages. Sorghum had occupied about 2 percent in Project areas.

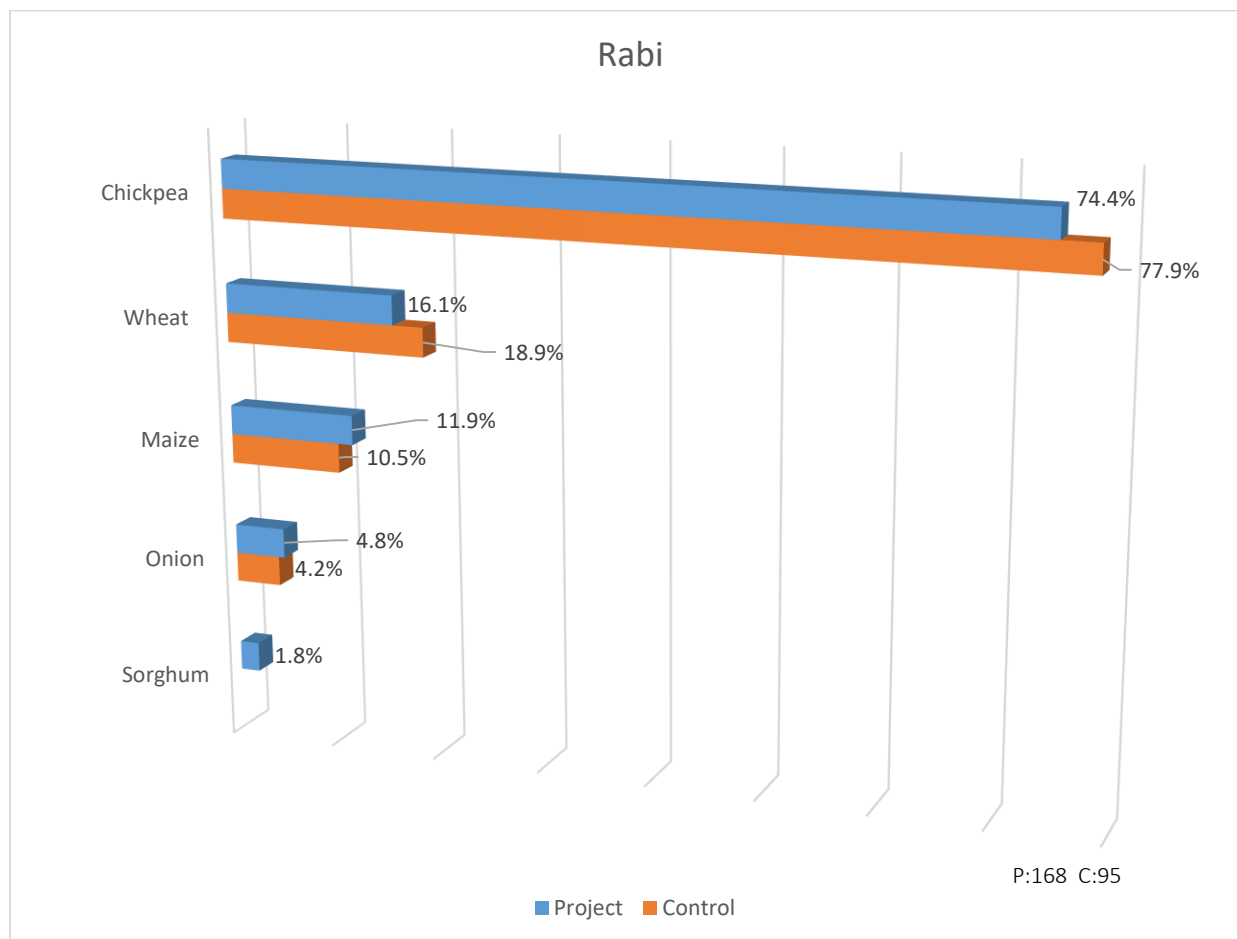


Figure 21: Major Rabi Crops

### 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 reported as Soybean (P:7.04, C:6.92 Q/acre), Cotton(P:6.78, C:6.92 Q/acre), Pigeon pea (P:8.50, C: 5.89 q/acre) whereas Chickpea (P: 6.70, C: 6.31 Q/acre) in project and control villages.



Table 9: Area, Production and Yield of Major Crops Reported during CM-V

| Sr. No | Crop Name  | Project   |                  |                |                     | Control   |                  |                |                    |
|--------|------------|-----------|------------------|----------------|---------------------|-----------|------------------|----------------|--------------------|
|        |            | Responses | Avg. Area (acre) | Avg. Prodn (Q) | Avg. Yield (Q/acre) | Responses | Avg. Area (acre) | Avg. Prodn (Q) | Avg.Yield (Q/acre) |
|        | Kharif     |           |                  |                |                     |           |                  |                |                    |
| 1      | Cotton     | 235       | 3.78             | 23.70          | 6.78                | 101       | 3.78             | 24.32          | 6.71               |
| 2      | Soybean    | 230       | 4.79             | 33.83          | 7.04                | 142       | 4.28             | 28.92          | 6.92               |
| 3      | Pigeon pea | 116       | 1.27             | 8.87           | 8.50                | 44        | 1.18             | 6.68           | 5.89               |
| 4      | Green gram | 6         | 1.68             | 4.17           | 4.12                | 3         | 1.57             | 4.00           | 2.57               |
| 5      | Black gram | 4         | 1.38             | 4.25           | 4.63                | 1         | 1.00             | 4.00           | 4.00               |
|        | Rabi       |           |                  |                |                     |           |                  |                |                    |
| 1      | Chickpea   | 125       | 4.59             | 32.35          | 6.70                | 74        | 4.83             | 30.05          | 6.31               |
| 2      | Wheat      | 27        | 2.24             | 20.96          | 9.15                | 18        | 2.69             | 24.72          | 9.91               |
| 3      | Maize      | 20        | 3.83             | 87.65          | 23.73               | 10        | 3.85             | 77.50          | 22.54              |
| 4      | Sorghum    | 3         | 2.27             | 43.00          | 19.63               |           |                  |                |                    |

### 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 had been calculated using the Directorate of Economics & Statistics methodology. The highest cost of cultivation was recorded for Cotton (Project: Rs.23197/acre; Control: Rs.23234/acre) followed by Soybean (Project: Rs.19428/acre; Control: Rs.20405/acre), Chickpea (Project: Rs.19253/acre; Control: Rs.20685/acre), Pigeon Pea (Project: Rs. 15729/acre Control: Rs. 16794/acre, Green gram (Project: Rs.10779/acre Control: Rs.11666/acre;) and Black gram (Project: Rs.9284/acre and Control: Rs.7898/acre).

Table 10: Cost of Cultivation of Major Crop (Average Cost in Rs per acre.)

| Village Type | Crop Name                                                                                                        | Soybean      | Cotton       | Pigeon pea   | Black gram  | Green gram   | Chickpea     |
|--------------|------------------------------------------------------------------------------------------------------------------|--------------|--------------|--------------|-------------|--------------|--------------|
| Project      | Responses                                                                                                        | 230          | 235          | 116          | 4           | 6            | 125          |
|              | Average of Working Capital (Family labour = Working capital)                                                     | 12454        | 14103        | 5915         | 4525        | 6942         | 12580        |
|              | Average of Cost (Land preparation to Other charges+ Interest on working capital @6%+ Depreciation on fixed cost) | 13771        | 15609        | 6801         | 5142        | 7852         | 14024        |
|              | Average of Cost A2 (Cost A1+ Rent paid for leased in land)                                                       | 13771        | 15609        | 6801         | 5142        | 7852         | 14024        |
|              | Average of Cost B (Cost A2+Rental value of own land + Interest on owned fixed capital )                          | 19126        | 22581        | 15508        | 8909        | 10529        | 18948        |
|              | Average of Cost C (Cost B+ Family labour) Total CoC per acre                                                     | <b>19428</b> | <b>23197</b> | <b>15729</b> | <b>9284</b> | <b>10779</b> | <b>19253</b> |
| Control      | Responses                                                                                                        | 142          | 101          | 44           | 1           | 3            | 74           |
|              | Average of Working Capital (Family labour = Working capital)                                                     | 13341        | 14075        | 6945         | 3100        | 7700         | 13889        |
|              | Average of Cost A1 (Land preparation to Other charges+ Interest on working capital @6%+ Depreciation on fixed c  | 14711        | 15580        | 7893         | 3631        | 8656         | 15411        |
|              | Average of Cost A2 (Cost A1+ Rent paid for leased in land)                                                       | 14711        | 15580        | 7893         | 3631        | 8656         | 15411        |
|              | Average of Cost B (Cost A2+Rental value of own land + Interest on owned fixed capital )                          | 20066        | 22552        | 16600        | 7398        | 11333        | 20335        |
|              | Average of Cost C (Cost B+ Family labour) Total CoC per acre                                                     | <b>20405</b> | <b>23234</b> | <b>16794</b> | <b>7898</b> | <b>11666</b> | <b>20685</b> |

### 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-V in Project villages is highlighted in the table below.

Table 11: Percentage Increase/ Decrease in CoC from CM-II to CM-V in Project

| Crop Name                                     | Cotton | Soybean | Pigeon pea | Chickpea | Green gram |
|-----------------------------------------------|--------|---------|------------|----------|------------|
| CM-II Value (Rs.)                             | 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      |
| % Decrease/ increased in CoC (CM-II to CM-IV) | 13.2%  | -2.5%   | -0.2%      | 3.7%     | 24.1%      |
| % 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%    | -1.4%      | -4.1%    | -0.8%      |

From CM-2 to CM-V it was observed that the cost of cultivation for Cotton, Pigeon pea, Chick pea and Green gram had reduced, whereas the cost of cultivation of major crop Soybean had increased by 5.2 percent.

This may be attributed to the significant hike in cost of seeds with heavy incidence of diseases and pests resulting in higher expenses incurred on sprayings for control which was observed in case of soybean. However, the probable reasons for the reduction in cost of cultivation for all the other crops under study are mentioned below:

- Use of own seeds had increased considerably resulting in reducing the cost of cultivation, especially in soybean, green gram and chickpea.
- Improved adoption of farm mechanization and improved farm implements at through Custom Hiring Centers (CHCs) and individual beneficiaries, as part of the project had 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.
- Increased awareness among farmers about optimum use of chemical fertilizers through extension activities and FFS demonstrations had resulted in reduction in the excessive use of chemical fertilizers, thereby reducing costs.
- Promotion and use of biological and organic insecticides/pesticides viz.; neemmark, panchamrut, pheromone traps, light traps under the project instead of extensive use of chemical pesticides. This had resulted in reducing repeated spraying and hence lowering down the expenses for control of pest and diseases.
- Improvement in water use efficiency through use of protective irrigation through sprinkler systems, drip system, PVC pipes, motor pumps at farm level had resulted in reducing labour costs for irrigation purposes.

### **Crop Damage Reported by Beneficiaries**

As part of the CM-V survey, farmers were asked if they have faced any crop damage in the last season. In the Project villages 58% out of 450 farmers, recorded reasons for crop damaged and Control villages 57% out of 229 farmers mentioned different reasons for crop damaged. Major Crops damaged as reported by Project Villages were Black gram (75 percent), followed by Cotton (69 percent), Soybean (38 percent), Chick pea (27 percent), Pigeon Pea by 25 percent apart from other crops. Similar trend was reported by respondents from Control villages with more or less same percentage.

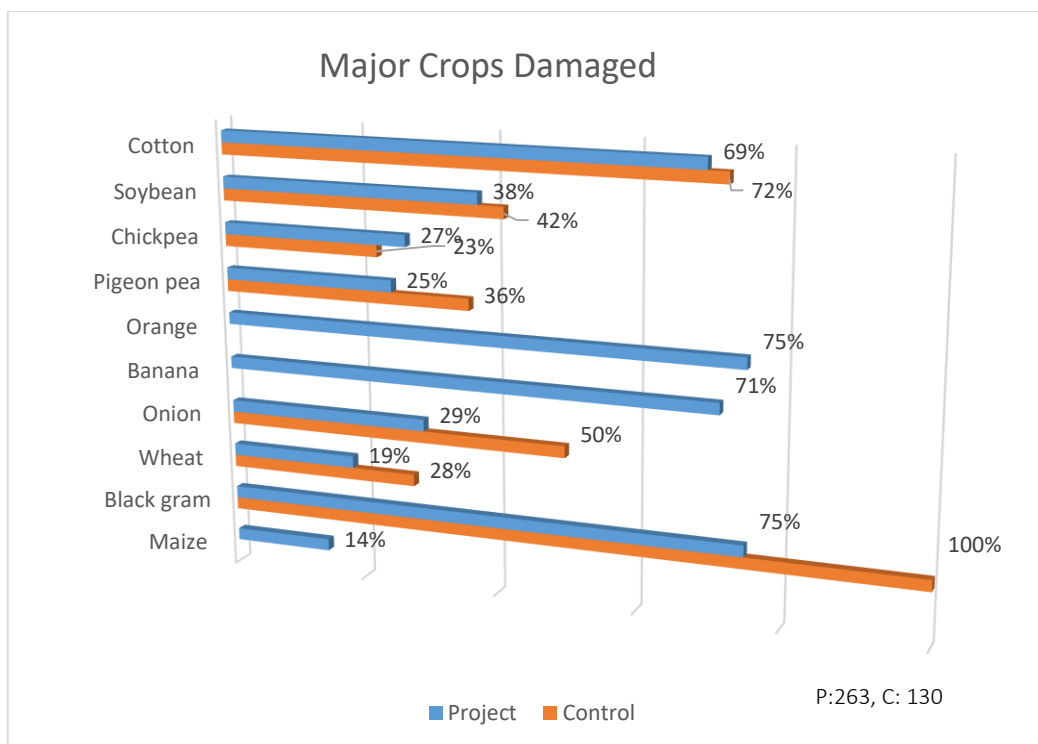


Figure 22: Major Crops Damaged

Changing climatic conditions are already presenting a significant challenge to Chickpea, Cotton and Soybean farmers in Project and Control areas. Across the region, most smallholder farmers attributed reductions in crop yields and changes in pest and disease outbreaks to rising temperatures and changing precipitation patterns in both Project and Control villages. They also reported detrimental impacts of extreme weather events on crop yields, pest and disease incidence, household income, and, in some cases, household food security. Although the perceived impacts varied across villages and districts, the magnitude of potential climate change impacts on smallholder farmer can be significant.

### Activities for Climate Resilient Agriculture Systems

The PoCRA project had 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.

#### Major Activities taken up

It can be clearly observed from the figure that in project villages, farmers have applied to various activities, which shows the importance of integrated farming systems.

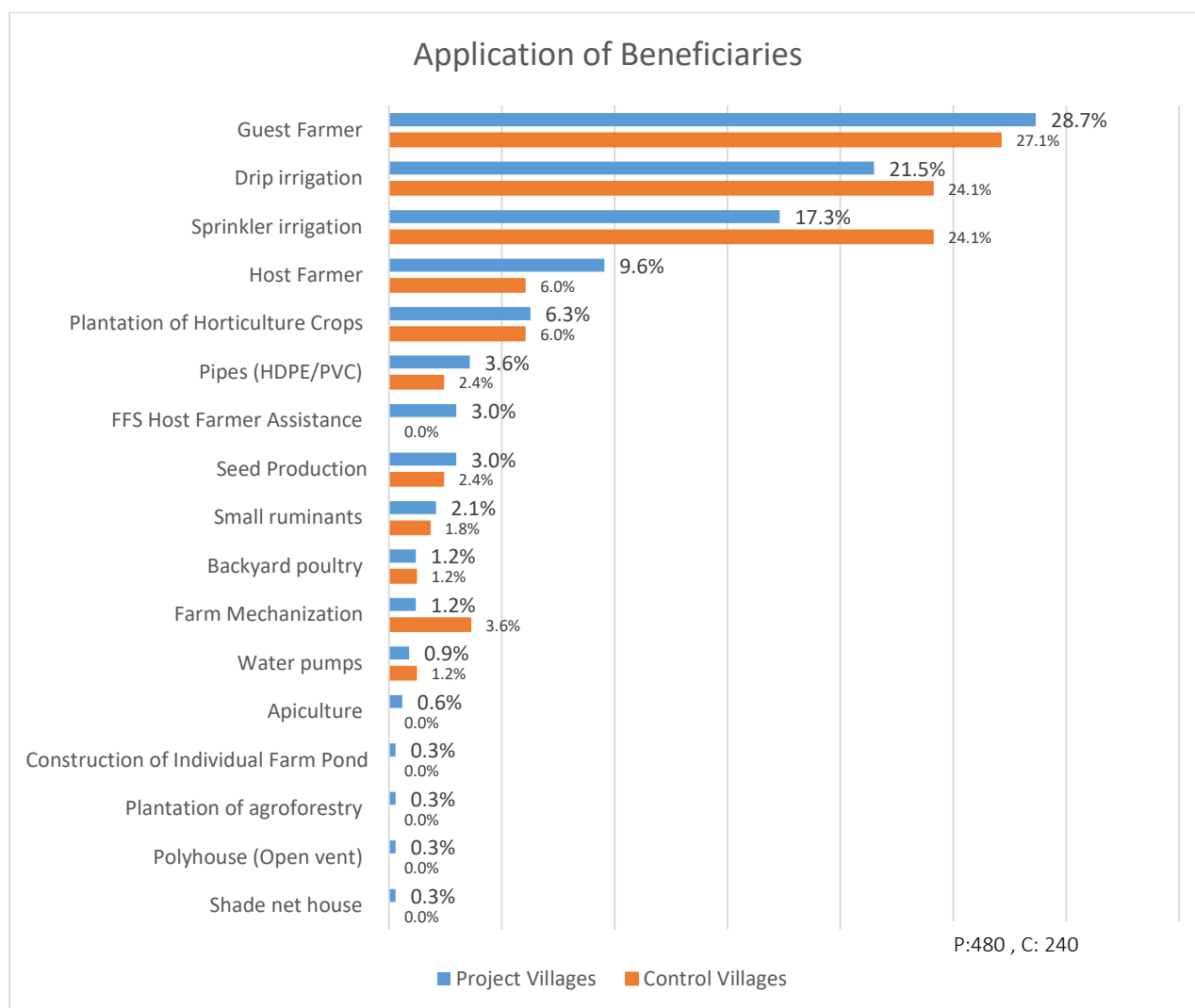
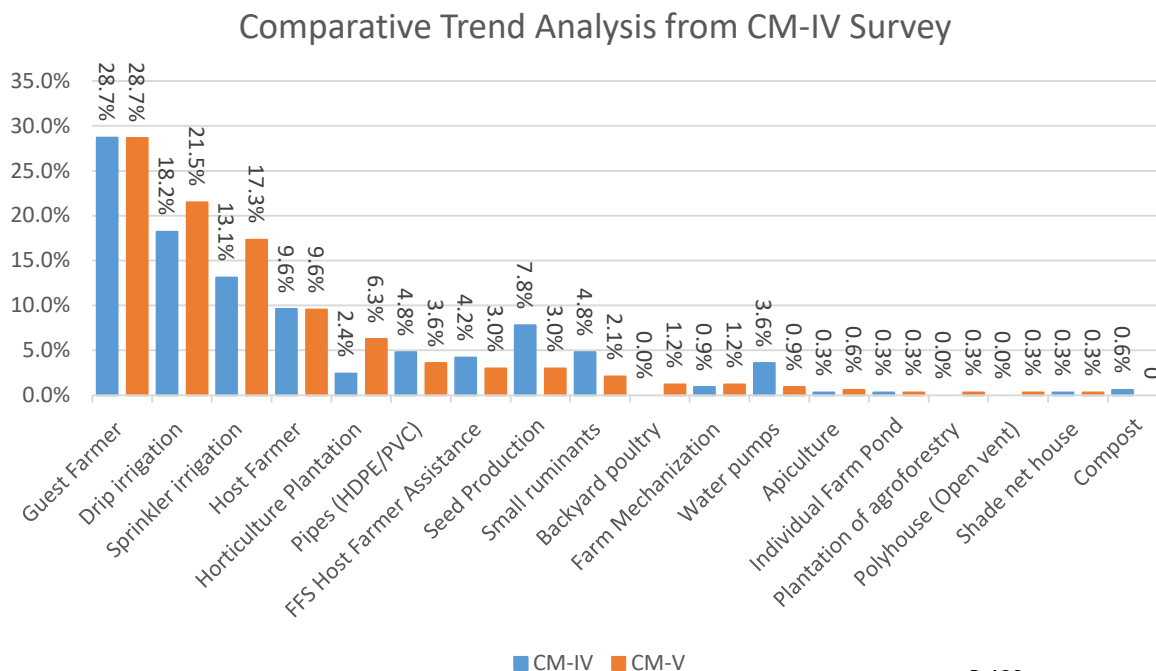


Figure 23: Application of Beneficiaries

However, in project villages, major activity was Guest farmers with 28.7% beneficiaries, followed by drip irrigation with 21.5% beneficiaries (in CM-IV it was 18.2%), Sprinkler Irrigation 21.5% (while in CM-IV it was 13.1%), 9.6% Host farmers (almost same as previous survey) and 35% were for Seed Production (it was 7.8% in CM-IV Survey). In Control villages also major activities were Guest Farmer (21.1%), Drip irrigation (24.1%), Sprinkler Irrigation (24.1%) and Seed Production (2.4%).

### Comparative Trend Analysis from CM-IV Survey

The comparison from previous Survey is presented in the following chart. We can clearly observe that farmers have started adopting micro-irrigation methods like Sprinkler and Drip to save water sufficient to irrigate additional areas. There was an increase in trend to adopt horticultural plantation in CM-V as compared to CM-IV. This was a positive trend in adopting climate resilience technology.

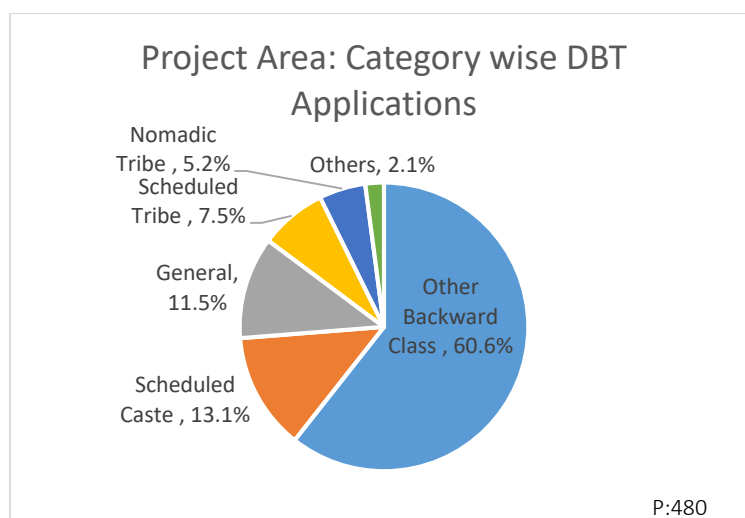


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Figure 24: Comparative Analysis from CM-IV Survey

### Category wise DBT Applications

Category wise DBT applications show 61% from OBC (in CM-IV it was 63%), 7.5% from ST (an increase of about 0.5% from previous survey), 5.2% from Nomadic Tribe (it was about 11% in CM-IV) this was due to less population of NT in this survey, 13% from SC there was 7 percent increase in number of beneficiaries in category from our previous survey (it was about 6% in CM-IV) and 11.5% from General Category (decrease of about 0.5% less from previous survey). The social category wise data shows that benefits under the project are being given to the most vulnerable as per the priority criteria.



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Figure 25: Category wise DBT Applications

## Training Received for CR Technologies

The CM-V Survey indicates a positive sign while going through the questions on trainings received on CR Technologies, 48 percent respondents from Project Villages reply affirmatively on training received on use of improved seed varieties, while for Control Villages it was 45 percent. About 27 percent from Project Villages have received training on Intercropping and 26 percent on Seed treatment; the figure was 25 and 18 percent for respondents from Control Villages respectively.

With BBF being an important component for CRT promoted by the project it was observed that respondents from Project Areas have shown much interest in Cultivation by BBF technology (8.4%), Integrated Pest Management (8.4%) and use of Pheromone traps (8%) as compared to Control Areas where the figures are much lower.

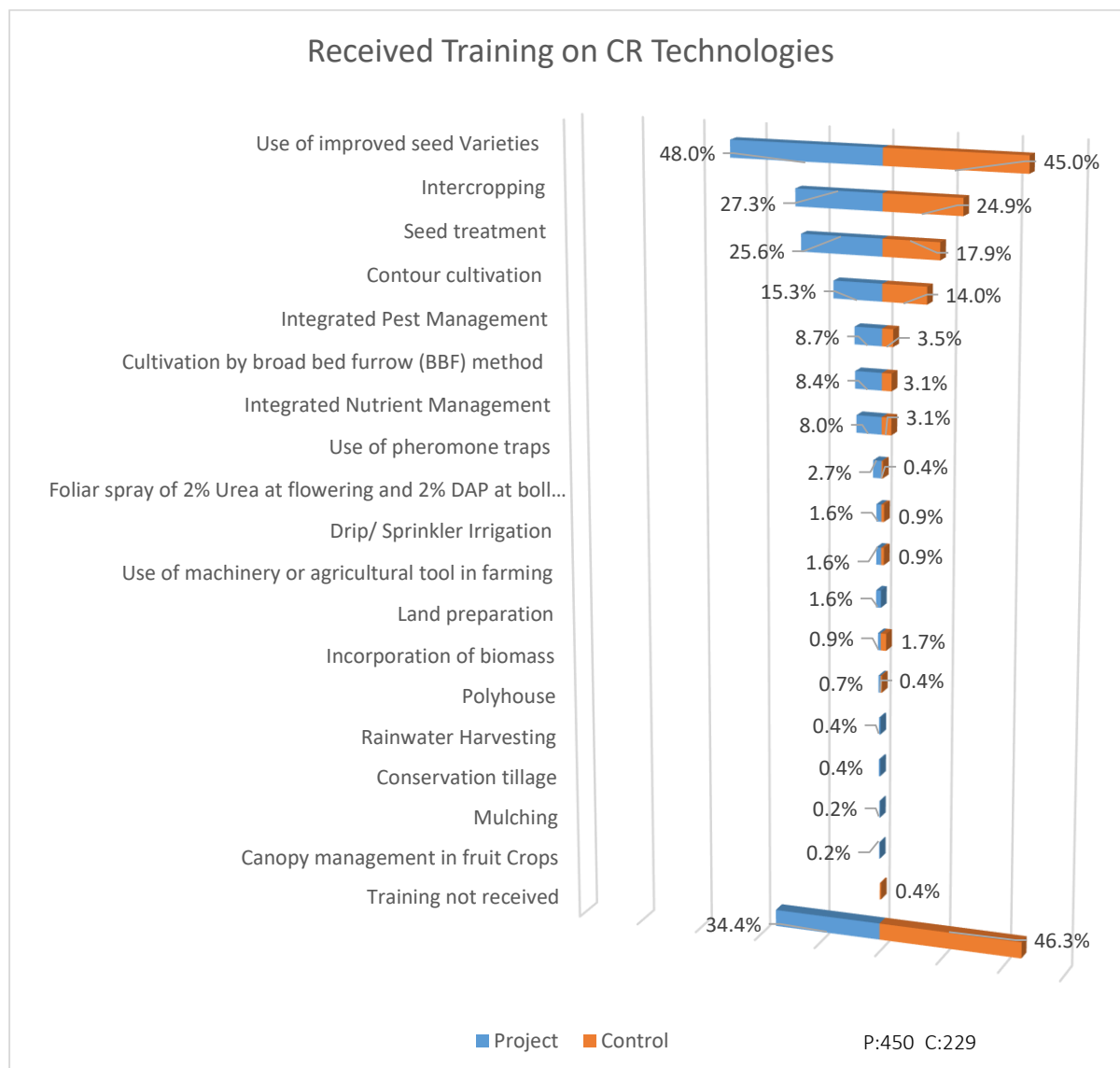


Figure 26: Received Training on CR Technologies

It can also be figured out that respondents from Project Villages have also received training for Land preparation, Rain-water harvesting, Conservation Tillage and Mulching, which was not observed in Control Villages.

### Adoption of Climate Resilient Technologies

We can see that project beneficiaries have adopted various CR technologies since the inception of the project. It shows that use of improved seed varieties had gained popularity in both project and control villages, 45% adoption was observed in Project areas, while it was 38% in CM-IV Survey. Similarly, intercropping was adopted by 25% project beneficiaries, while it was 44.3% in CM-IV Survey in Project villages. Likewise, we can see 25% higher adoption of treated seeds in Project villages, while it was 38% in CM-IV Survey. While Contour cultivation was adopted by 11% in Project villages, and IPM was adoption was higher figuring 8% in Project Villages. The comparative figures with Control villages are shown in the below graph.

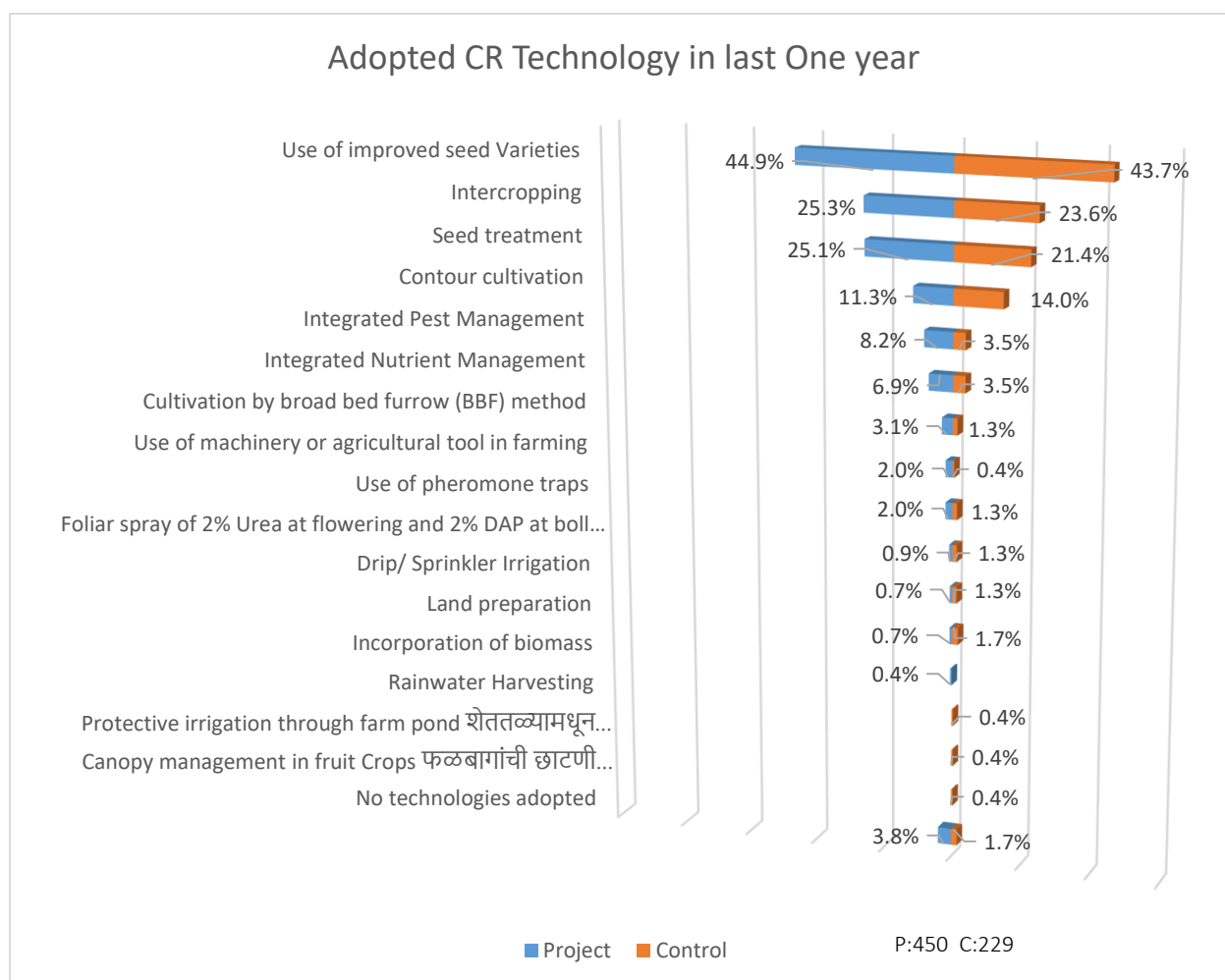


Figure 27: Adopted CR Technologies in Last One Year



The graph also shows that Project villages have also adopted Integrated Nutrient Management, which was about 7%, while that of Control villages was only 3.5%.

### Benefits from CR Technologies

On being asked whether they have been benefitted with CR adoption, the following response was recorded:

About 83% of beneficiaries in the Project Villages have responded that they have been benefitted, while only 17% did not agreed, which was very much similar to respondents from Control Villages.

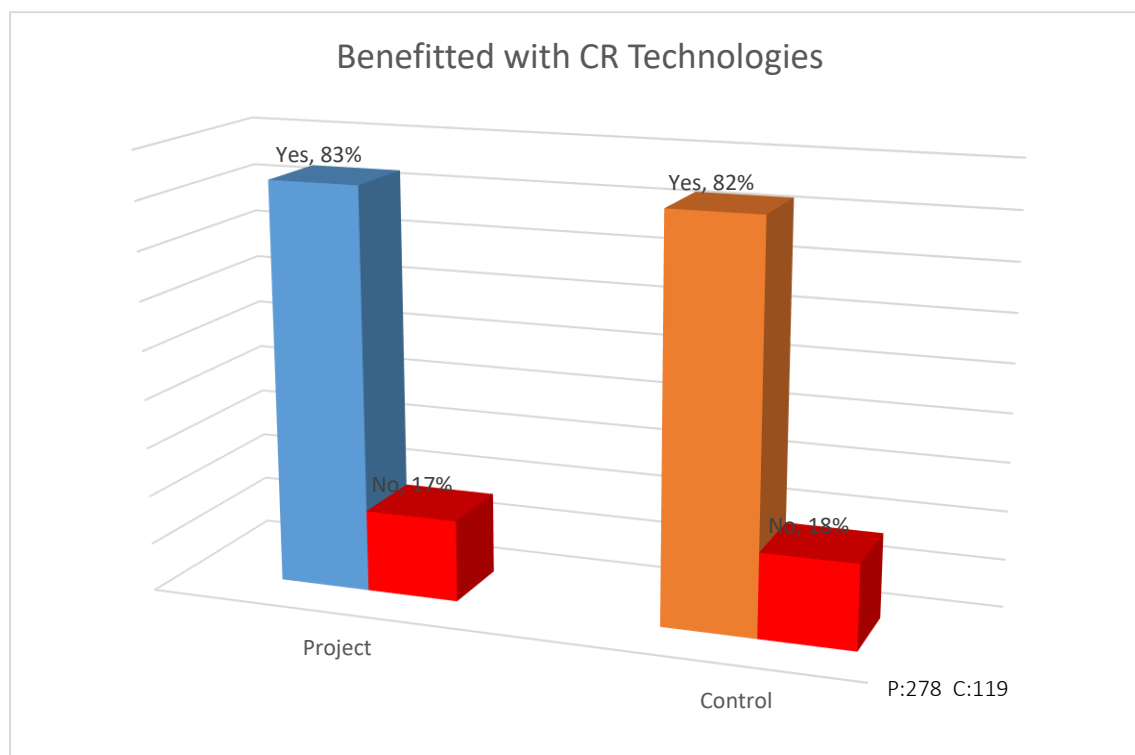


Figure 28: Benefitted with CR Technologies

As per Survey Questionnaire, we also asked reasons for being benefitted by adoption of new CR Technologies, 80% from Control Villages agreed that it reduces cost of cultivation, while the figure was 72% in Project Villages. The response data for Soil and moisture conservation was almost same, 30% from Project villages and 32% from Control villages agreed. The interesting part we can see that 62% respondents from both Project and Control villages agreed that adoption of CR Technology gives better control over pest and diseases. Apart from this, for Improved soil fertility 28% respondents from Project and 30% from Control villages agreed, similarly, on optimum use of pesticides 22% from Project and 17% from Control villages have same views; 18% respondents from Project villages agreed on improved germination rate, 10% on increased water availability. The corresponding figures in Control villages are 16% and 7% respectively.

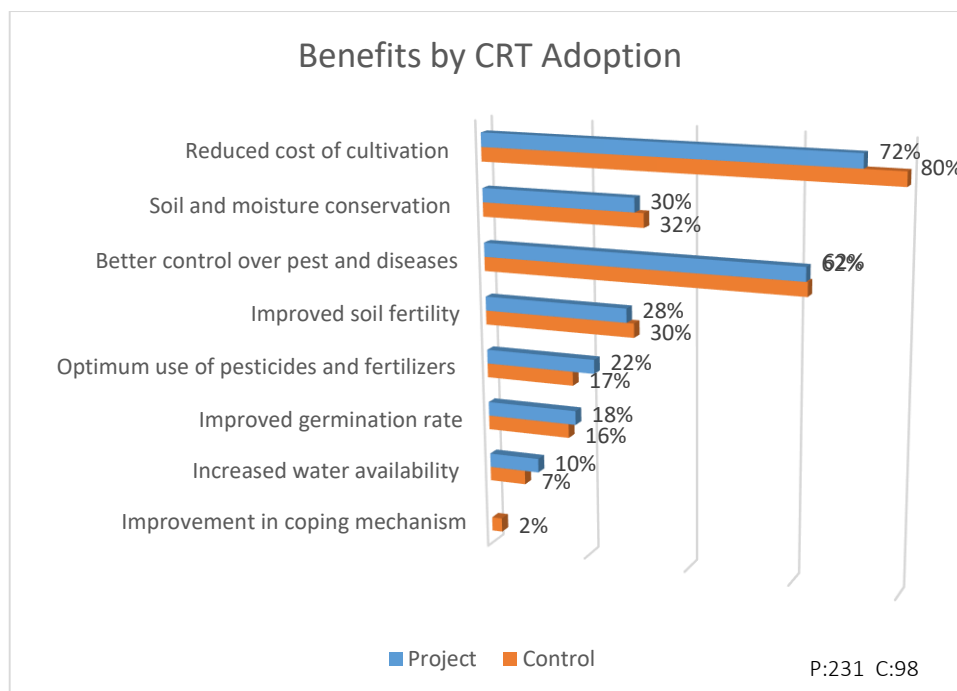


Figure 29: Benefits by CRT Adaption

### Impact of Technology Adoption

While observing Survey data on percentage increase or decrease as compared to the level before adoption of CRT, the clear difference was not been observed with the available sample size. The average percent yield increase was 12% in Project Areas and 11% in Control Areas. There was no difference observed in data collected on average percent CoC reduced and average percent pest and disease attack reduced.

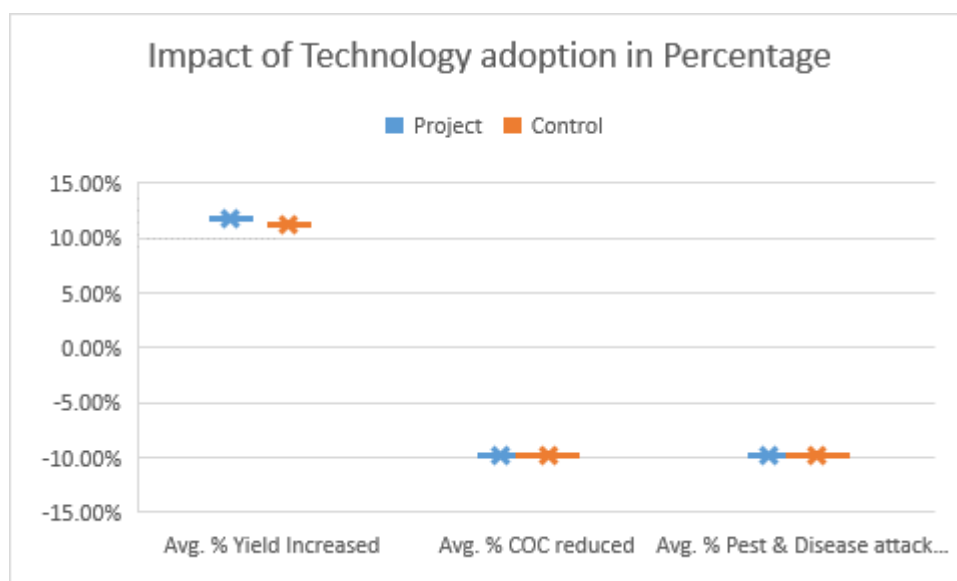


Figure 30: Impact of Technology Adaption in Percentage

## Reasons for Not Benefitted with CRT

When asked about the reasons for not being benefitted from Climate Resilient Technologies, it was observed that 40% respondents from Project Villages said it was due to Lack of technical knowledge and 23% said Technologies taught was difficult to apply in field. The corresponding figures in Control villages are 33% and 14% respectively. Interesting to find that about 76% of respondents from Control Villages cited Unavailability of advanced agricultural machinery and implements as a major reason for not adopting CR technologies, while the figure was 51% in case of Project area.

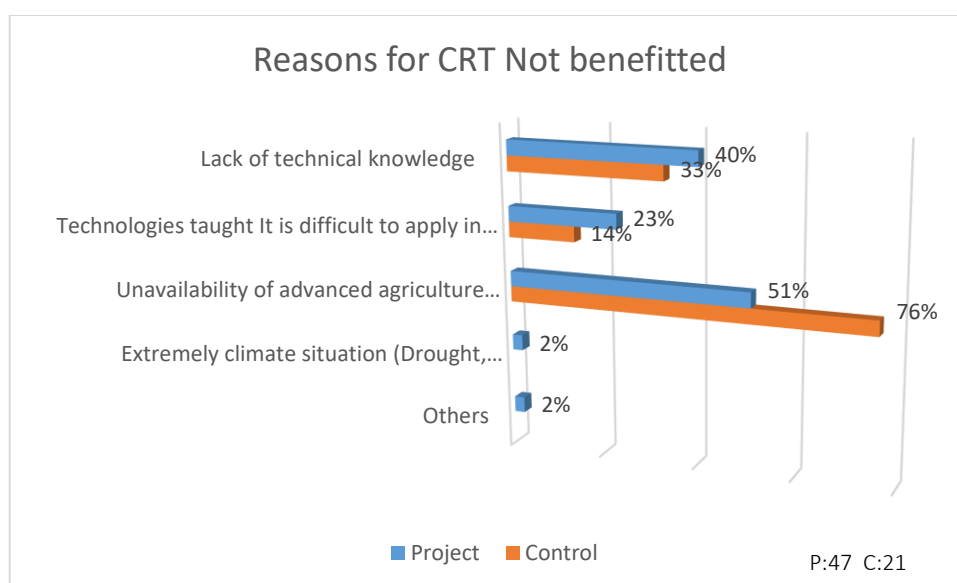


Figure 31: Reasons for CRT Not Benefitted

## Feedback on Farmers' Field School Conducted

**As part of Component A:** As a part of PoCRA, Farmer Field School (FFS) was a major activity. FFS focuses on demonstration of climate-resilient varieties of field crops as well as of productivity-enhancing agronomic practices. As part of FFS, technical assistance was provided for technology transfer to farmers through demonstration, diffusion, and adoption at farm and village level. In this activity, 30 percent Host Farmers and 70 percent Guest Farmers in Project villages and 18 percent Host farmers and 82 percent Guest farmers have been interviewed for CM-V survey.

### Crop demonstrated on field as part of FFS

Cotton being major *Kharif* crop in this region, so 40 percent FFS was conducted in Project Villages and 50 percent in Control. It was followed by Soybean which covered 26 percent in

Project and a larger chunk of 40 percent in Control Areas. FFS was conducted on Intercropping of Soybean with Pigeon Pea which occupied 9 percent in Project villages.

Similarly intercropping of Cotton with Pigeon Pea was 10 percent in Control Villages, while about 2 percent in Project Villages. About 2 percent area it was intercropped with Black gram in Project Villages. It was recorded in Survey that most FFS attended by farmers was for Chickpea which covered about 14 percent area in *Rabi* Season in Project Villages and but it was not reported from Control Villages.

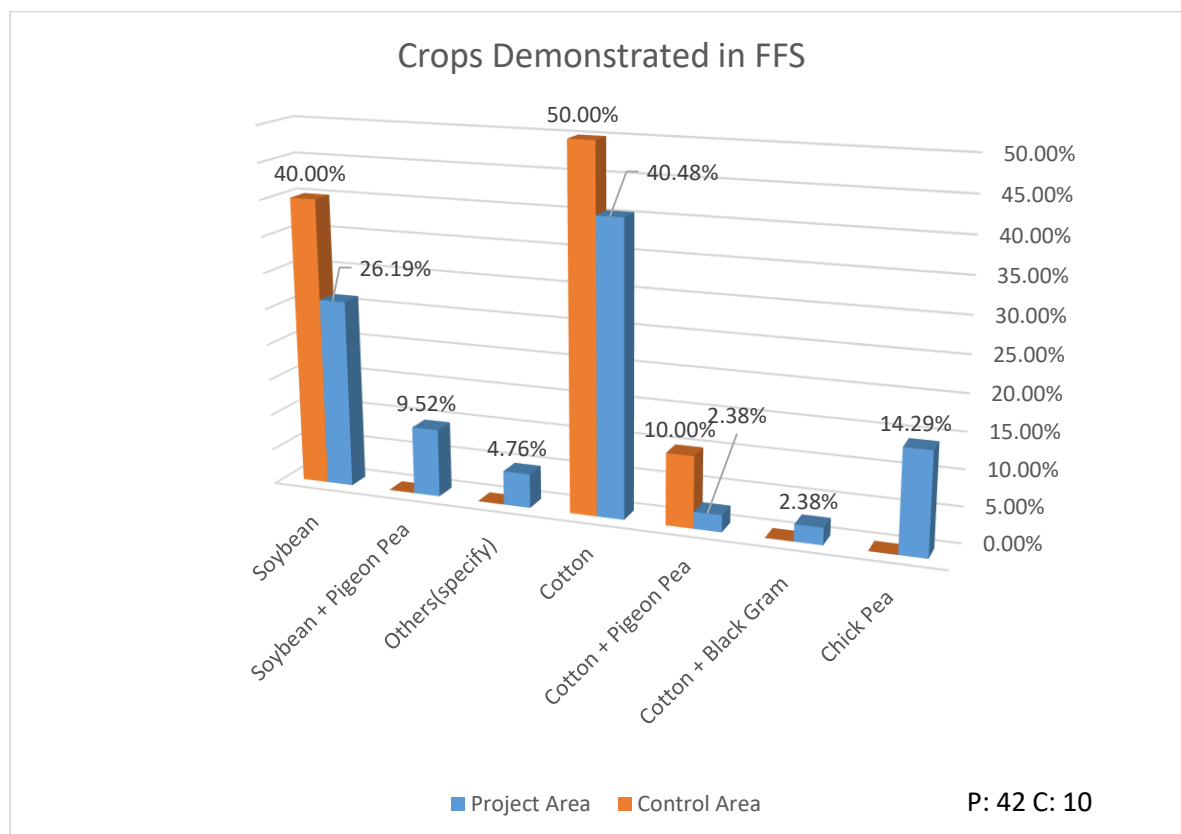


Figure 32: Crop Demonstrated in FFS

### Motivation for Host Farmer

As a part of Survey it was also asked about who had convinced them to participate in FFS as a host farmer. About 43 percent respondents from Project Villages said it was Agriculture Assistant, who had convinced them to participate, while this figure was 90 percent in Control Areas for Agriculture Assistant. It was followed by FFS Facilitator with 38 percent respondents from Project Villages indicating them as influencer. The figure for VCRMC members was 12 percent from Project Areas.

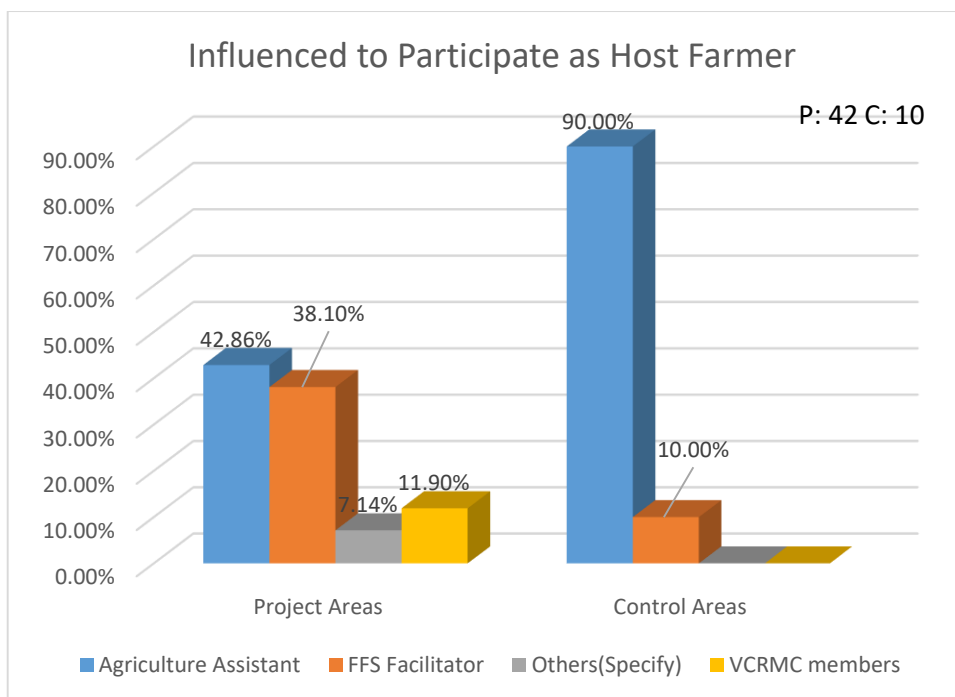


Figure 33: Influence to participate as Host Farmer

### Status of honorarium receipt from PoCRA

When asked about honorarium received from PoCRA for participating in FFS as host farmer, 69 percent from project areas said they have received the honorarium, while 21 percent said they have not received.

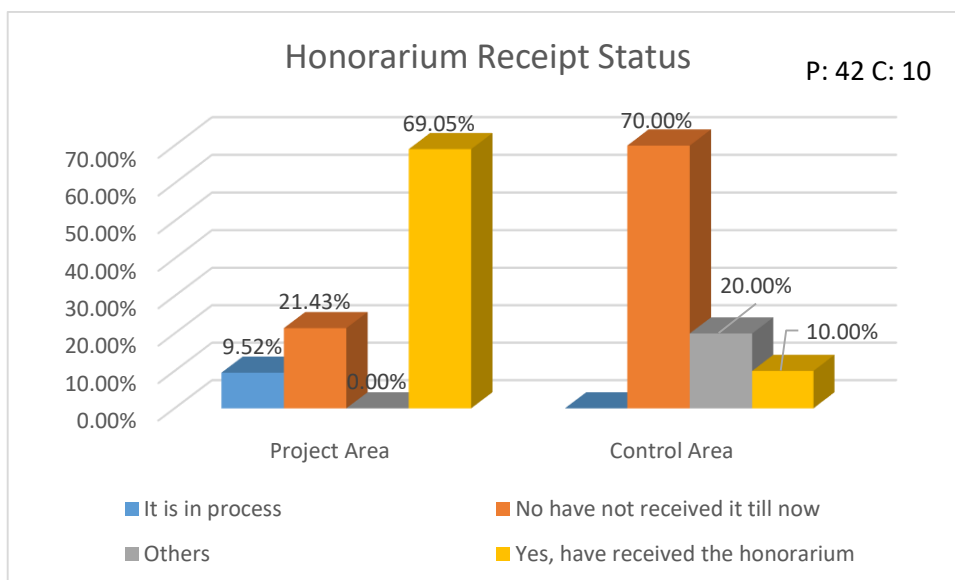


Figure 34: Honorarium Receipt Status

On being questioned about the difference in the quality and cultivation of produce from Demo and Control Plots, 88 percent respondents from Project and 80 percent from Control Villages replied that the quality of the produce was much better from their normal practices.

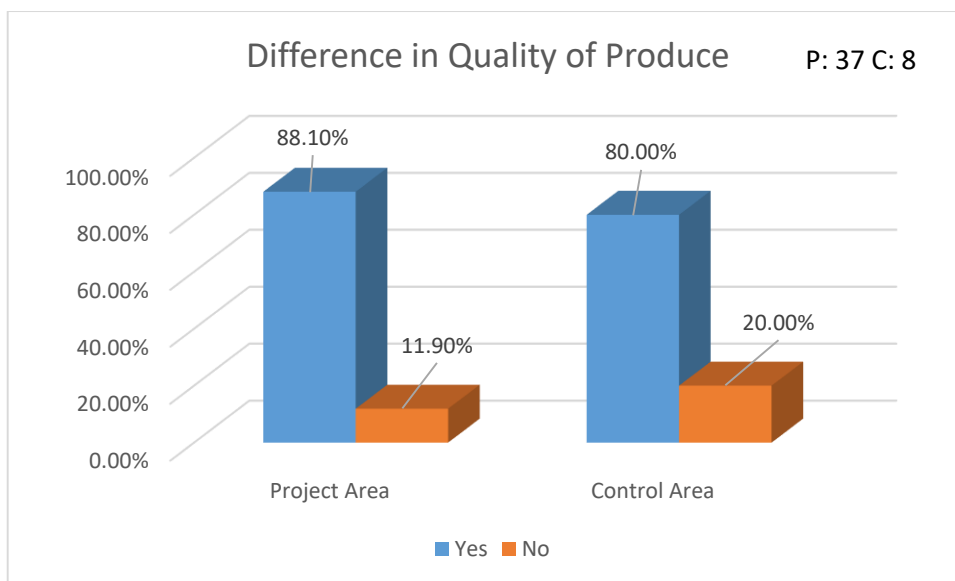


Figure 35: Difference in Quality of Produce

When asked about the reasons for differences in quality of the produce, 78 percent respondents from Project and 66 percent from Control said that yield was higher in Demo plots. While 84 percent from Project Villages said there was less pest attack, the figure was 63 percent in Control. About 63 percent from Control said crops were more climate resilient to weather, while it was 41 percent in Project Villages. Less tillage was reported by 8 percent of respondents from Project Areas, 16 percent said it was better quality due to reduced usage of fertilizer and chemicals in Demo conducted in Project Villages.

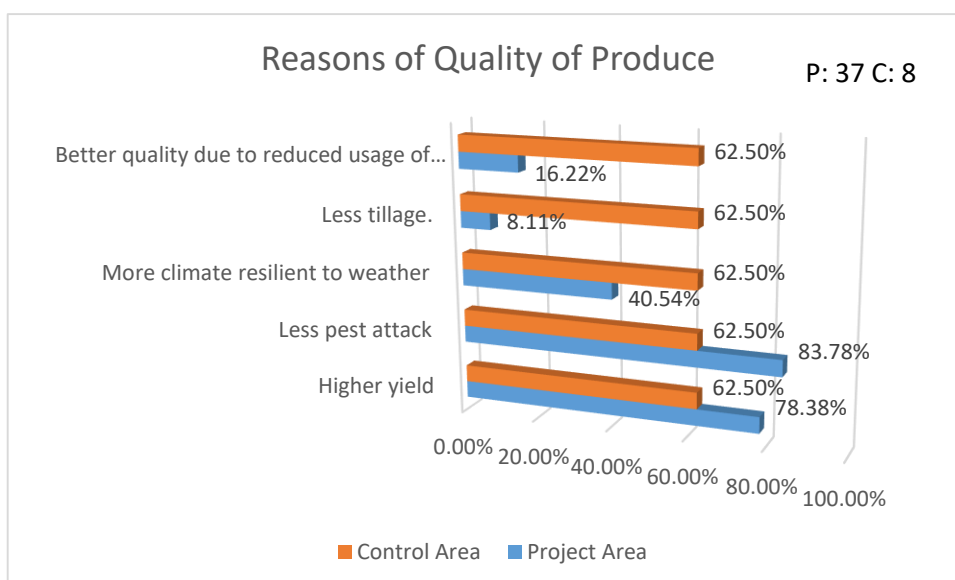


Figure 36: Reasons of Quality of Produce

When asked about how often they attend the school day programs, 26 percent from Project Villages said all of the times, while it was 24 percent for Control Villages; while 8 percent respondents from Project Villages said they never attended any FFS.

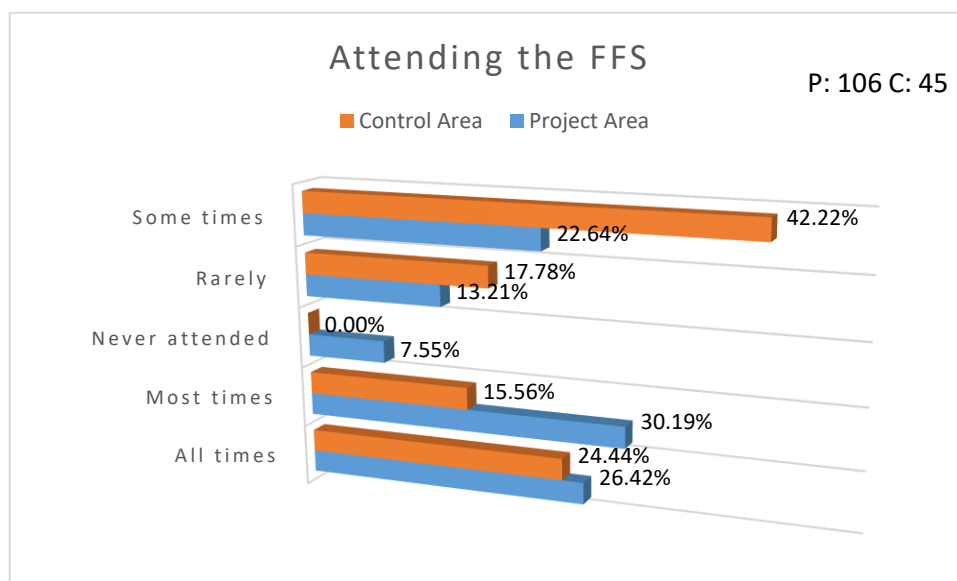


Figure 37: Attending the FFS

On being questioned about which season they had participated in FFS, 59 percent from Project Villages replied in *Kharif* 20-21, while the figure was 60 percent in Control. It was followed by 22 percent in *Rabi* 20-21 by respondents from Project Villages and almost similar about 20 percent in Control Villages. The graph clearly indicates that there was decrease in participation in FFS from the year 20-21 to 21-22, as it was reduced to 8 per in *Rabi* 21-22 in Project Villages and 2 percent in Control during this season.

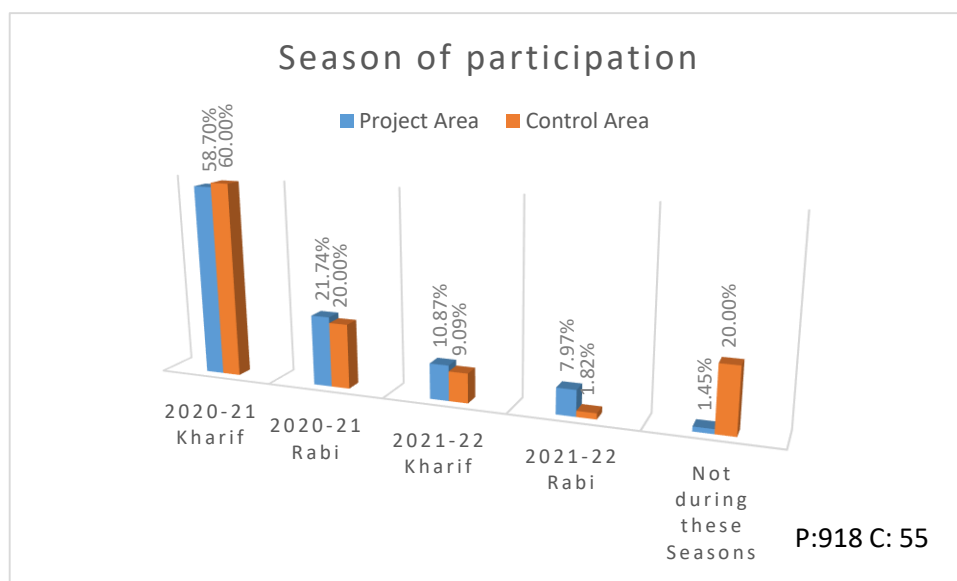


Figure 38: Season of Participation

Beneficiaries were also asked about the crops being demonstrated in FFS season, 43 percent from Project and 36 percent from Control responded it as Cotton, followed by Soybean with 53 percent in Control and 25 percent from respondents from Project Villages.

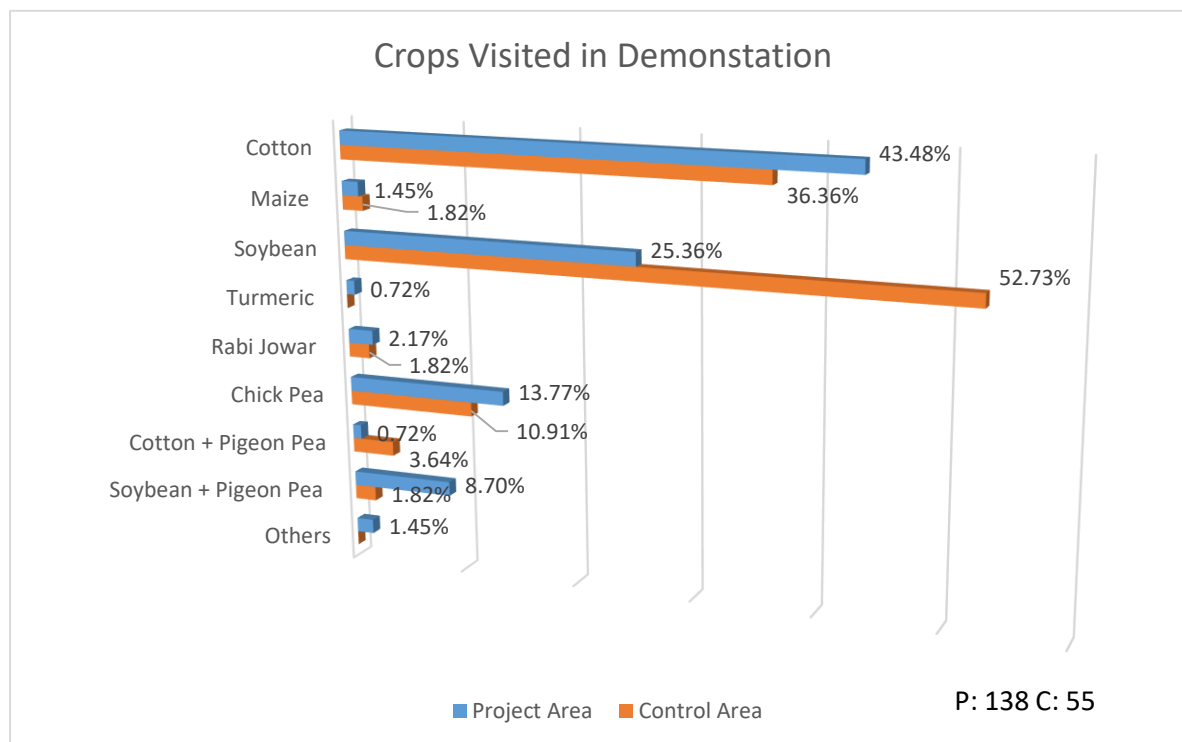


Figure 39: Crops Visited in Demonstration

### Key Reasons for Participation

On being asked about the key reasons because of which they have participated in the Farmer Field School demonstration session, 73 percent from Project Villages replied that they were interested to learn new technologies related to agriculture, while the figure was 76 percent in Control with same response. About 56 percent respondents from Control said it was increase in production and income, while 51 percent from Project agreed to the same. About 37 percent from Project Villages responded that it would reduce cost of production, while it was 42 percent in Control Villages with same answer. The option to save their crop from climate variation (high temperature/ low rainfall/ very high intensity rainfall etc.) was agreed by only 4 percent in Project Villages and still higher 7 percent by respondents from Control Villages.



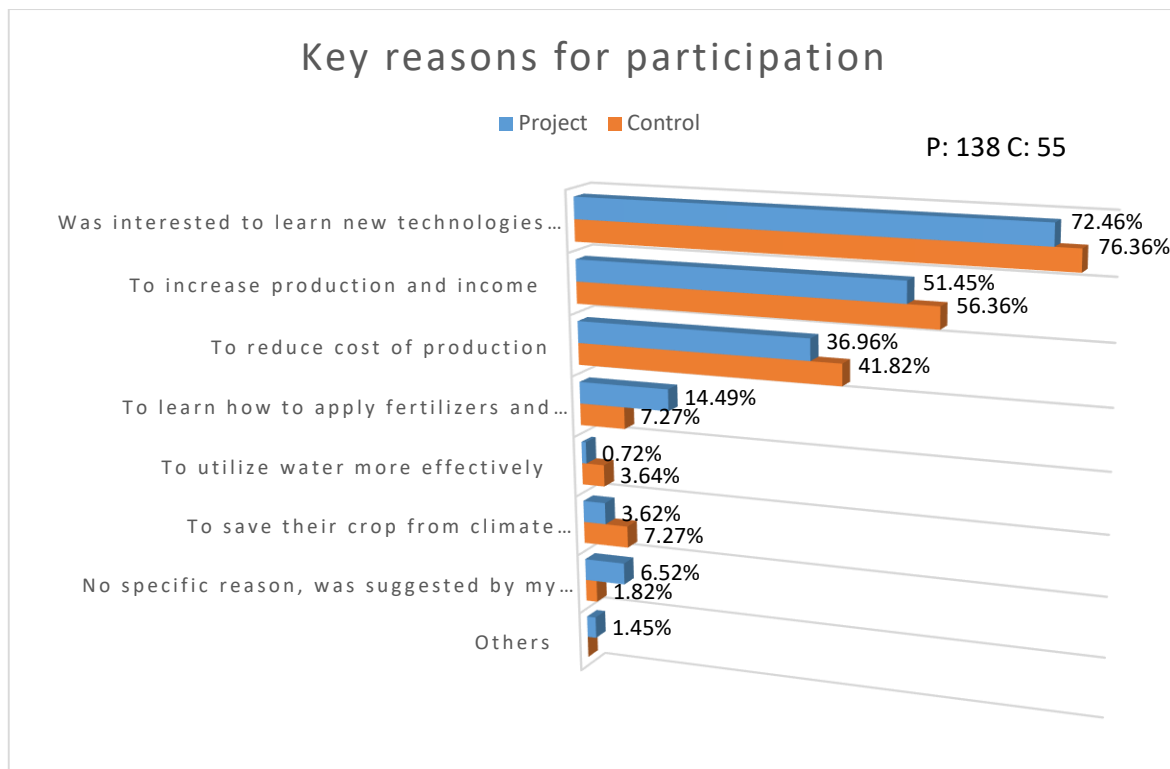


Figure 40: Key Reasons for Participation

As a part of Survey beneficiaries were also asked about how they are being informed about the time of the next FFS session, 38 percent from Project Villages said it was by FFS Facilitator during the FFS session, while it was 35 percent in Control Villages. About 35 percent of respondents from Project Villages said that they were informed by SMS or WhatsApp messages; the figure was 38 percent in Control with the same answer. This data also shows that information disseminated by AA, CA or Krushi Tai was only 24 percent in Project Areas and 11 percent in Control.

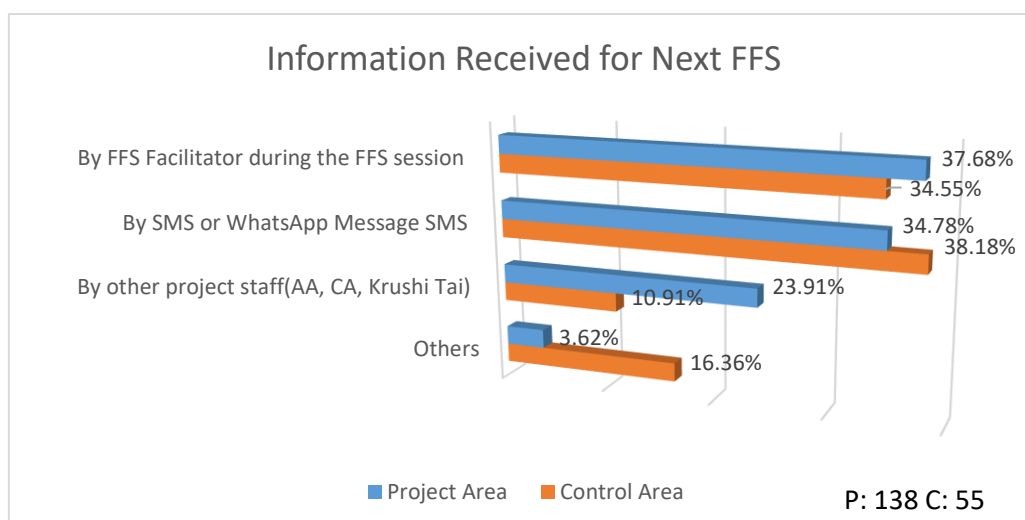


Figure 41: Information Received for Next FFS

From the Survey, it was also recorded that average attendance per person in FFS was more or less same in both Project and Control villages, rounding off to 4.

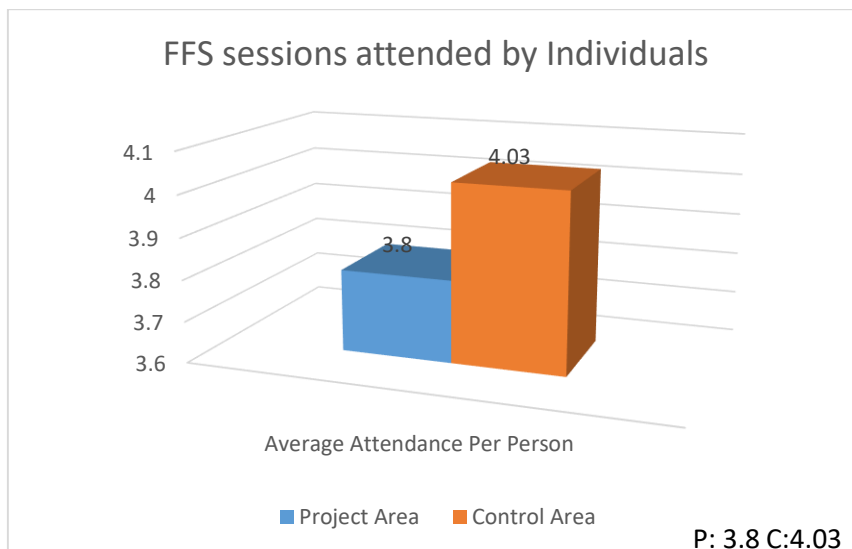


Figure 42: FFS sessions attended by Individuals

When beneficiaries were asked if their queries in the FFS session satisfactorily answered by the FFS organizer, 55 percent respondents from Project said always, 40 percent said sometimes, while 5 percent replied never. While, it was 51 percent from Control Villages replied it as always and 47 percent said sometimes their queries were answered satisfactorily and only 2 percent said they never got a satisfactory answer.

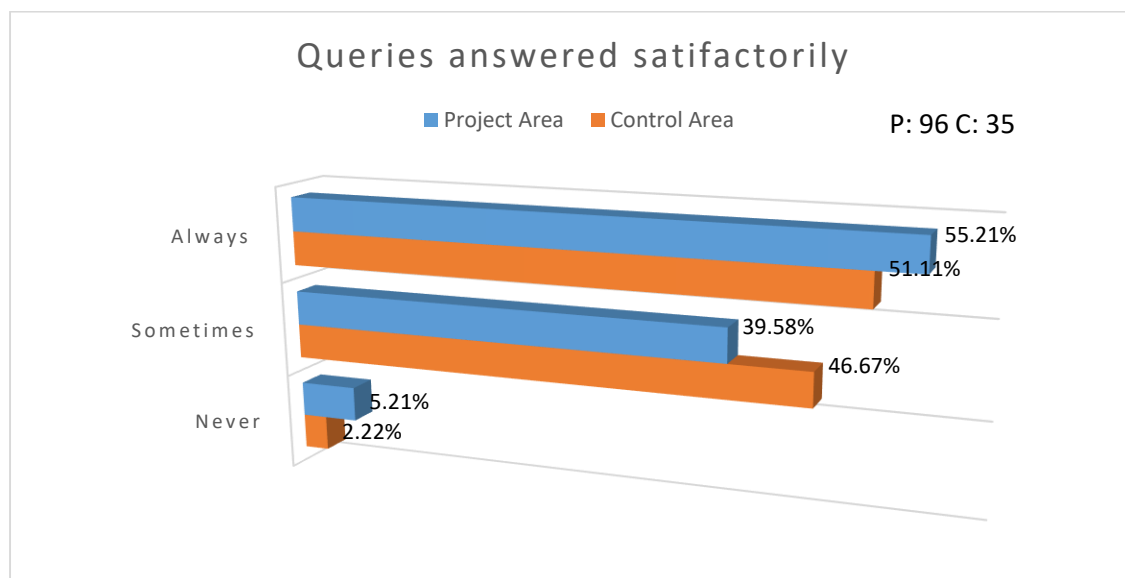


Figure 43: Queries Answered

A question was asked to the beneficiaries, if they want training on any other topic to be provided during the FFS, which was currently not included in the FFS session, 46 percent

respondents from Project and 49 percent from Control Villages said that they want trainings for other topics also.

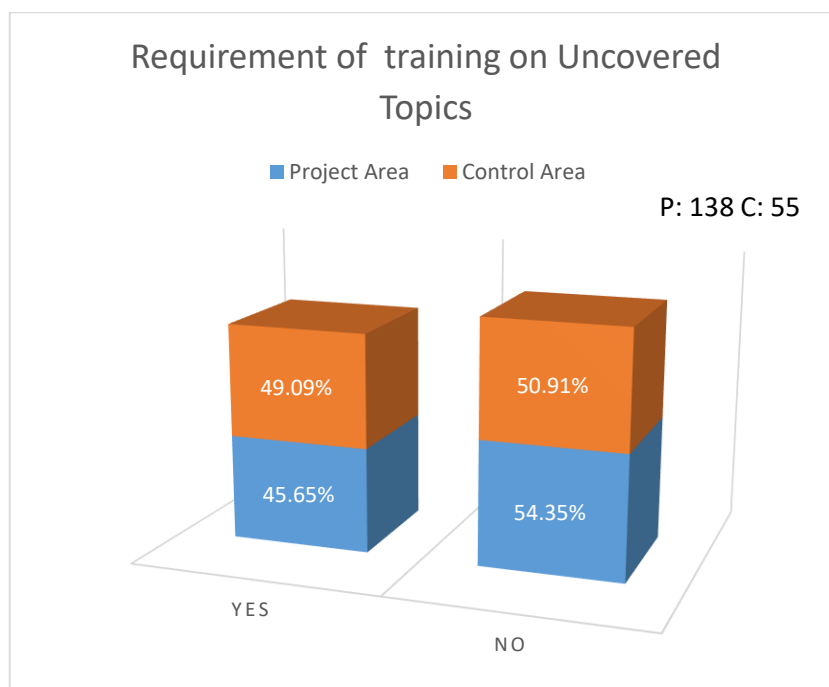


Figure 44: Requirement of training on Uncovered Topics

Since timing had been major constraint for farmers for attending the FFS, a question was asked if they find the timing of FFS sessions was convenient or not. About 49 percent from Project and 45 percent from Control Villages said it was always convenient for them to attend FFS, while 23 percent from Project said it was mostly convenient and 25 percent said it was sometimes convenient to them. While 35 percent from Control said, it was sometimes convenient for them to attend FFS.

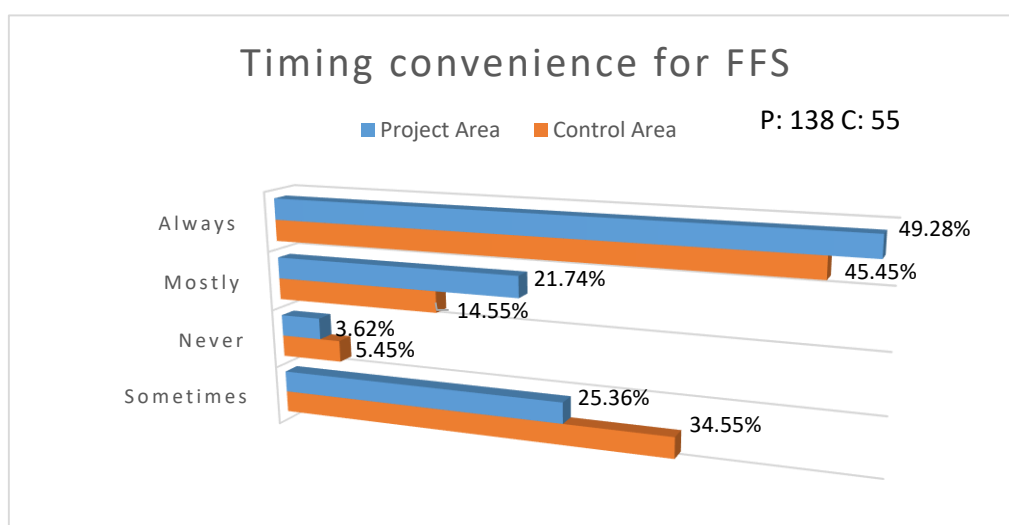


Figure 45: Timing Convenience for FFS

On being asked if they think to have benefitted from participating in the demonstration sessions as part of Farmer Field School, 87 percent from Project Villages said that they have been benefitted from these demo sessions.

### Adoption of FFS Demonstration

In the Survey we had asked about what kind of benefits did they get by participating in these demonstration sessions and adopting the practices demonstrated, about 90 percent from Project Villages said it was for awareness about good agriculture practices, while 85 percent from Control replied the same (P:120, C: 46). Similarly, 54 percent respondents from Project Villages said it was better awareness of use of inputs like fertilizers, seeds etc., while 63 percent from Control Villages agreed for this same reason. 48 percent from Control agreed that it helps in improvement of Soil health, while 34 percent from Project Villages agreed on this aspect. Twenty Five percent from Project Villages said they wanted to get knowledge on less diseases in crops, while 28 percent from Control cited the same reason. It was about 10 percent from both Project and Control agreed that it would help them to increase in crop production or yield.

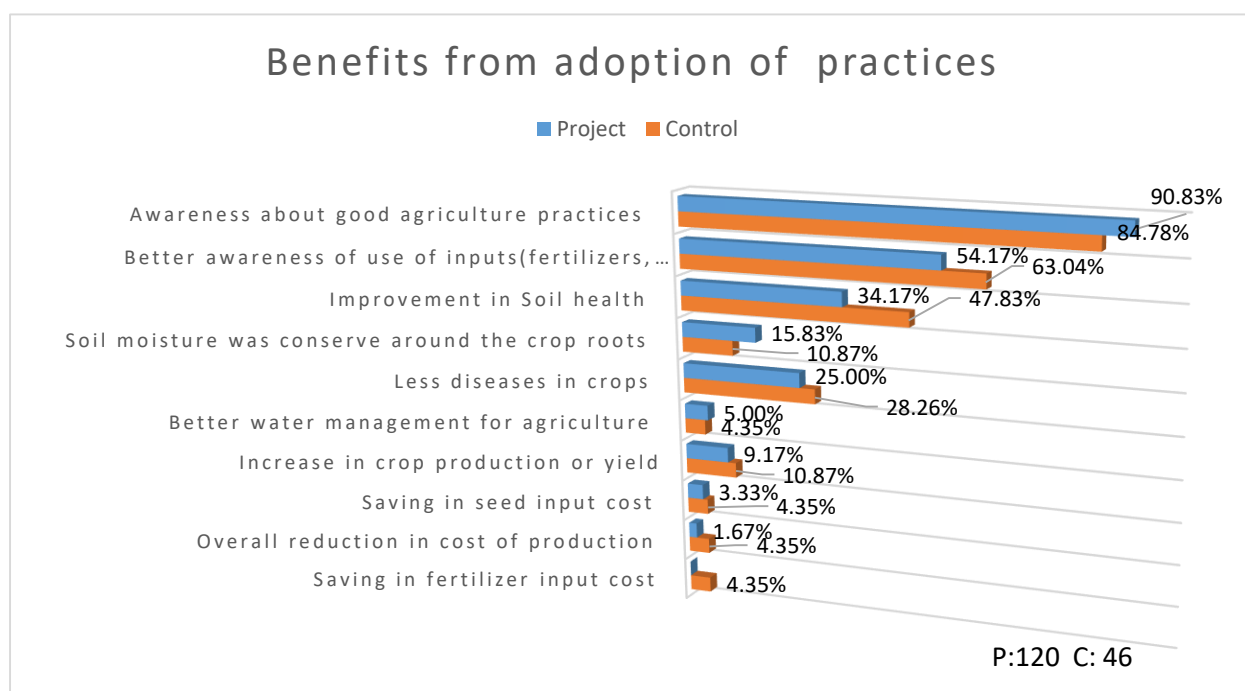


Figure 46: Benefits from Adoption of Practices

To assess whether the FFS training was beneficial or not, question was asked in this survey. About 39 percent of respondents from Project Villages said that training session was not useful, while 33 percent from Control Villages said that Technology was not found useful. About 22 percent from Project Villages felt that new technology was costly. Also 44 percent from Control reported that technology demonstrated are not useful.

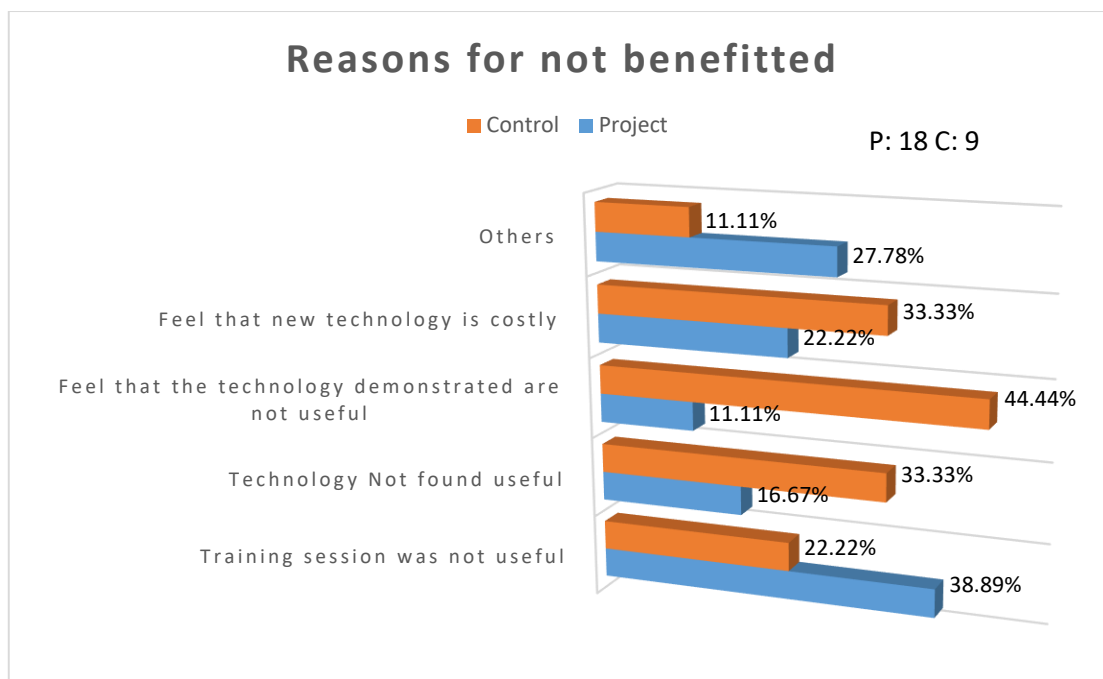


Figure 47: Reasons for not Benefitted

### Technology Training Received from FFS

On being questioned on the Technology on which training was received in FFS from the Project Villages, 45 percent said spraying techniques with safety measures, while, 43 percent said it was preparation of pesticide formulations and spraying, 36 percent said foliar application of 2 percent DAP, 21 percent agreed on cultivation by BBF, 19 percent indicated Integrated Weed Management was good, 17 percent said they were benefitted by training on seed treatment with bio-fertilizers and bird perches (10/acre) training was liked by 15 percent respondents.

### Technologies Already Adopted before Training

Farmers were also asked what were the technologies they had adopted even before the training, 53 percent respondents said it was preparation of pesticide formulations & spraying, while only 40 percent farmers from Project villages agreed on it. Forty-one percent respondents from Project and 49 percent from Control said that they had already adopted spraying techniques with safety measures even before the training. Similarly, 29 percent from Project and 36 percent from Control Villages had already adopted the technology of foliar application of 2 percent DAP. About 12 percent respondents from Project areas had already adopted seed treatment with bio-fertilizers, using bird perches (10/acre) and seed treatment with Fungicides. Twenty Five percent of respondents from Control villages already knew about seed treatment with bio-fertilizers.

## Adopted Technologies after Training

As a part of FFS, beneficiaries were asked about the technologies demonstrated as a multiple-choice response. When they were asked about the technologies they had adopted only after the training, 36 percent from Project villages said they had adopted the technology of preparation of pesticides formulations and spraying only after the training, while 45 percent respondents in Control villages agreed for the same. About 34 percent respondents from Project Area said that they had adopted the technology of spraying techniques with safety measures only after the training; the figure was 44 percent in Control villages for the same answer. From Control villages 18 percent said they had adopted seed treatment with bio-fertilizers only after the training, while only 12 percent from Project villages agreed on the same.

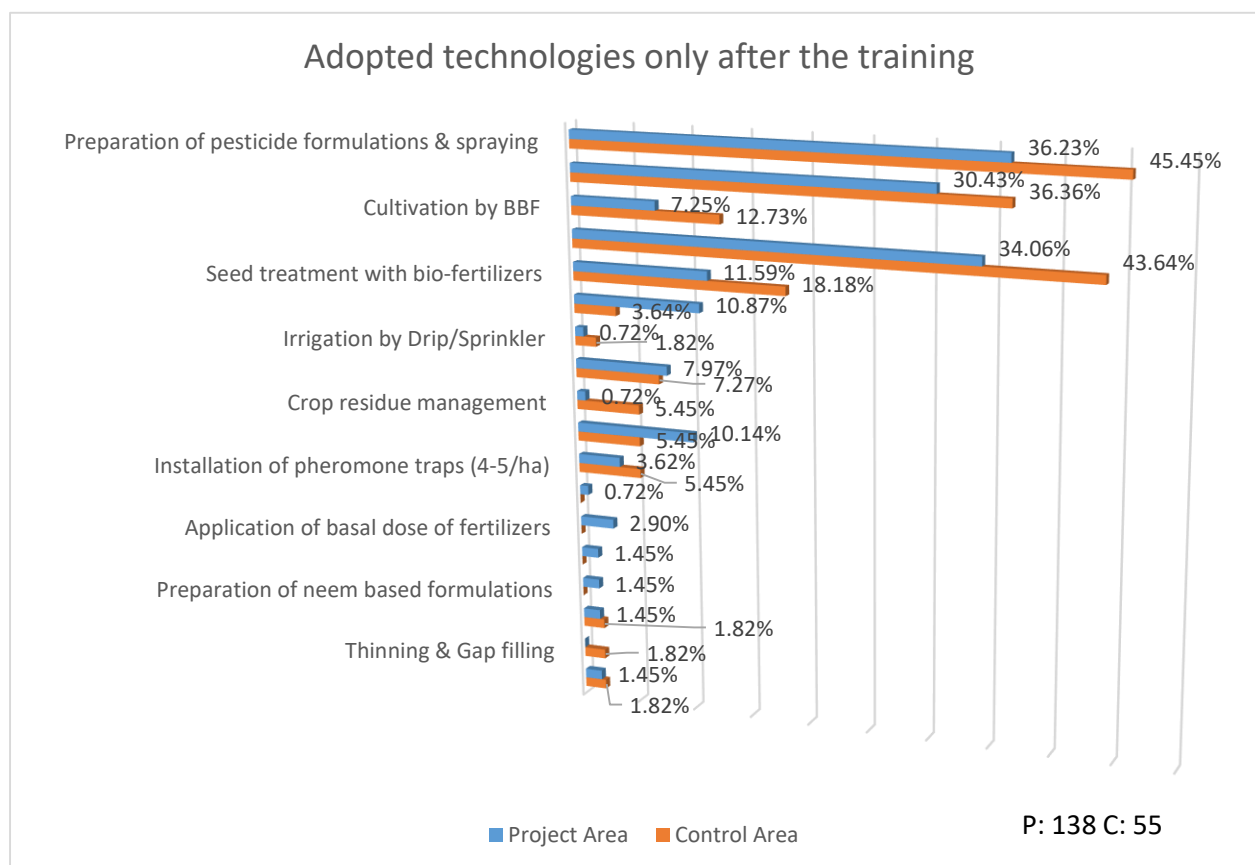


Figure 48: Adopted technologies only after the trainings

## Top three Most Useful Technologies

In CM-V Survey beneficiaries were also asked to identify the top 3 most useful technologies to be adopted, in Project area the top three technologies were first with 37 percent preference was Spraying techniques with safety measures, second was preparation of pesticide formulations and spraying with 36 percent and third preference was foliar application of 2 percent DAP with 28 percent.

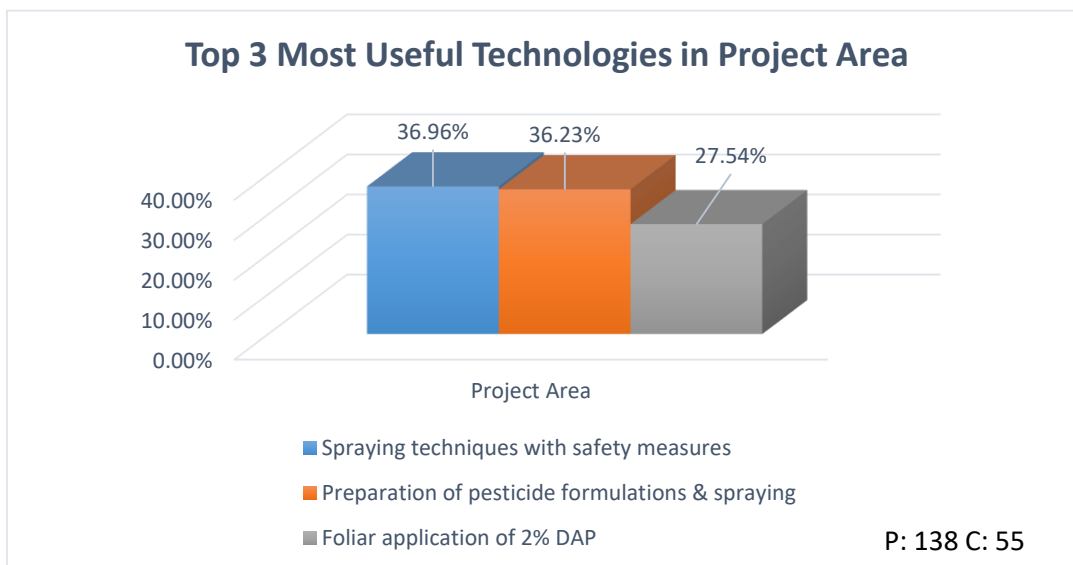


Figure 49: Top three most useful Technologies

While the top 3 most useful technologies in Control area were, preparation of pesticide formulations and spraying with 49 percent preference, second was spraying techniques with safety measures with 42 percent response and third with 35 percent preference was foliar application of 2 percent DAP.

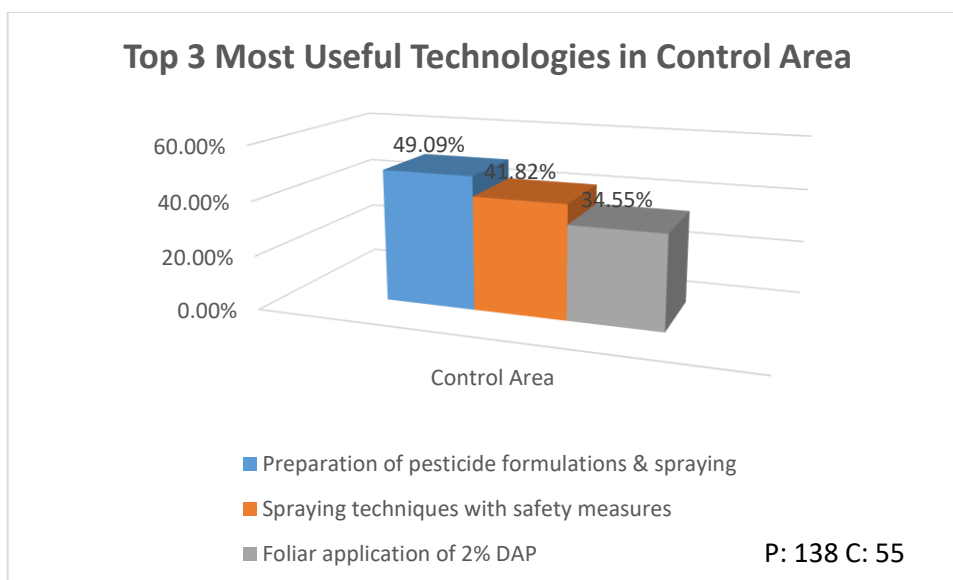


Figure 50: Most Useful Technologies in Control Areas

## Whether Faced Climate Vulnerability

An important question on facing any climate vulnerability i.e. less or unseasonal rainfall, high temperature, etc. in the last one year was asked from the beneficiaries. Seventy-Four percent from Project Villages and 75 percent from Control agreed that they are facing climate vulnerability from past one year.

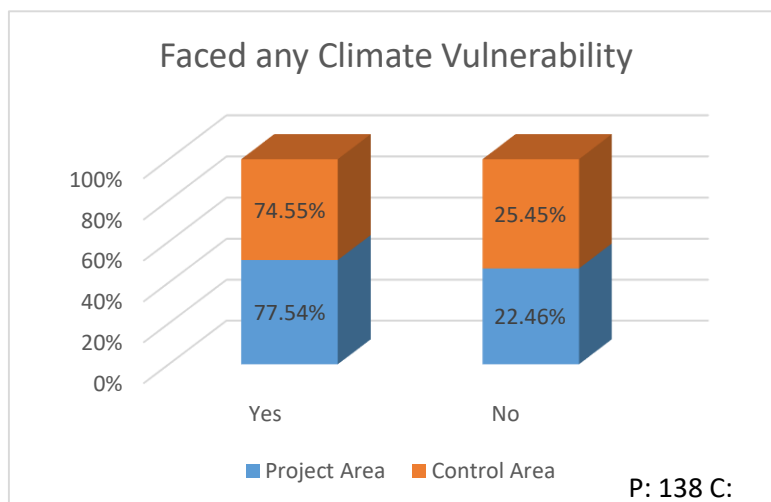


Figure 51: Facing Climate Vulnerability

When asked about what they think the learned technologies are helpful in reducing the impact of climate vulnerability, from the project villages, 55 percent of respondents said it was very helpful, 40 percent said it was somewhat helpful, while only 4 percent said it was not helpful at all.

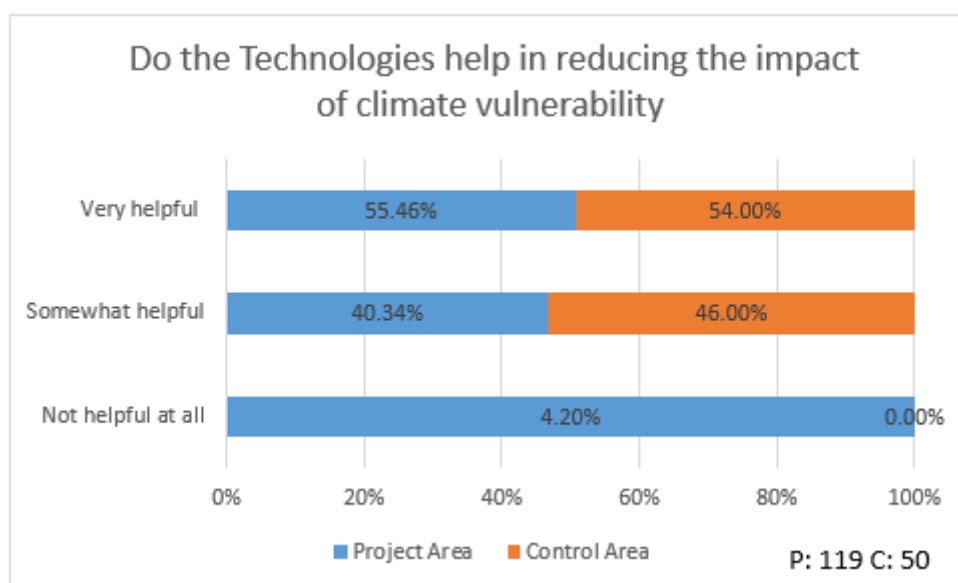


Figure 52: If technologies help in reducing the impact of climate vulnerability



### **Findings from KII of FFS - Coordinator**

During the CM-V visits, FFS coordinators from three districts were interviewed, namely Akola (2), Jalgaon (2), and Wardha (1), with a total of five checklists being compiled.

### **Skills of the FFS Facilitators**

The FFS facilitators had honed their skills through training provided by the PoCRA project in the agriculture sector, which proved valuable in guiding farmers and providing them with accurate information. In PoCRA project villages, FFS facilitators were relaying information and knowledge about climate-resilient technologies in the local language to enhance farmers' understanding and convince them to adopt environmentally-friendly practices. These facilitators were providing technical guidance to farmers regarding minimum-tillage farming and adoption of minimum-tillage technology. FFS activities had been conducted in accordance with the crop cycle and on host farmers' fields. However, the FFS facilitators needed to improve their delivery of lectures and demonstrations for better impact.

### **Knowledge of recent eco-friendly practices in agriculture**

The FFS facilitators possessed knowledge about the latest environmental supplement methods in the agricultural sector, such as identifying friendly and hostile elements. They had provided information about how to distinguish between the two and guided farmers in advance planning. The importance of BBF technology and minimum tillage had been shared with farmers, and FFS facilitators had assisted in its implementation. In addition, the facilitators had conducted demonstrations on organic farming techniques such as Dashparni extract, Nimboli extract, Integrated Pest Management, and Yellow Sticky Trap, among others, to promote sustainable farming practices.

### **Efforts made to improve the skills of the facilitators**

Feedback and observations were documented during the Farmers' Field School (FFS) activities, and the VCRMC meeting reviewed the FFS conduct and the topics covered. Following this discussion, facilitators were advised to enhance their skills. Moreover, feedback was obtained from host farmers regarding the information imparted by FFS facilitators during the FFS activities and demonstrations. Based on this feedback, the facilitators received training on the latest technologies and information related to agriculture.

### **Efforts to improve adoption of technology and practices**

Farmers were regularly provided with information about the latest technologies in agriculture. To ensure effective implementation, the new technologies were first introduced to interested and capable farmers. If the results were positive, then other farmers also adopted these.

### **Regular meeting with SDAO and FFS Facilitators**

Regular meetings were conducted between SDAO and FFS facilitators. Although there were currently no issues, the purpose of these meetings was to ensure the availability of both SDAO and facilitators for future FFS activities.

They were responsible for developing the content for training materials and literature related to climate-resilient technologies. Any challenges that arose during FFS activities, such as technical issues or low participation rates, were discussed with SDAO and resolved in a timely manner. Activities such as the use of organic manure, zero-tillage farming, Pheromone Traps, Dashparni, and Vermi wash were suggested for inclusion in the manual and for delivery during FFS activities.

### **Attended any crop cutting experiment**

FFS facilitators had attended the crop harvesting experiments and entered the data online. They had discussed the results with SDAO as well. It was important for them to visit the crop harvesting experiments on time because farmers plan their schedules based on the availability of labor and machinery.

### **Steps to increase participation of women farmers and marginalized groups**

The VCRMC meeting discussed the schedule for conducting the Farmers' Field School (FFS) and emphasized the need to include more women and participants from marginalized groups. Krushi Tai attended the meetings of Self-Help Groups (SHGs) and informed them about the FFS and various activities of the project. Cluster team members interacted with farmers and villagers from marginalized groups to encourage them to attend the FFS.

### **Response of women and men guest farmers on FFS**

More male farmers had attended the FFS sessions, as there were more male farmers available in the village. Female farmers, on the other hand, had more household responsibilities compared to men, which made it difficult for them to attend the sessions. Women worked on a daily basis on their own as well as others' fields. They faced transportation and travel limitations, and also needed support from other women to attend the FFS. Despite their interest in attending the FFS, women farmers are unable to do so due to their household responsibilities, farm labor, and other work.

### **Any exclusive program of FFS for women farmers conducted**

According to all the FFS coordinators, no separate FFS was conducted exclusively for women farmers. Most of the FFS sessions had both men and women participants, although female participation was minimal.

### **Feedback on the quality and effectiveness of the FFS**

The quality and effectiveness of FFS sessions was evaluated based on the number of farmers in attendance, the information delivered, and feedback from the farmers. The FFS sessions were conducted in accordance with the crop cycle. Attendance was registered and photos were uploaded on the app. The effectiveness of the topic was measured by the level of usefulness and the degree of participation from the attendees. Wherever these conditions were met, the FFS sessions had been more effective.

### **Technologies adopted by guest farmers**

- During the FFS, demonstrations were conducted on the use of *Dashparni* extract, *Nimboli* extract, integrated pest management, bird repellent, and biological control methods that avoid the use of chemicals. Additionally, a yellow bug trap was demonstrated.
- It was observed that the use of organic and biological pest and disease management products, organic fertilizers, pheromone traps, and BBF had increased in the project area.
- The use of BBF had increased mainly in black cotton soil under waterlogged conditions in the project area.
- It was noted that villages in Akot and Telhara blocks of Akola district had used BBF less frequently, as most of the land was flat slope and saline soil.
- The FFS Coordinators realized that more awareness was needed to be created about the use of BBF through demonstrations, audio-visual training, photo documentation, and case studies. This had led to some farmers now being interested in using BBF technology.

### **Feedback/ Adoption of agro-met advisory for Farmers**

The advisories provided to farmers were useful as they provided information about weather conditions, different types of pests and diseases, and their control measures. This helps in adopting control measures in a timely manner and planning various field operations.

Farmers use agro-meteorological advice to properly manage pests and diseases and their control methods, which minimizes dependency on input dealers to some extent. This was helpful for the farmers.

### **Alternative way to make awareness about climate resilient technologies**

Creating WhatsApp groups to share information on climate resilient technologies can help raise awareness among farmers. We also need to establish demonstration plots at the village level and provide technical guidance to farmers throughout the crop season. We should

regularly record observations and arrange visits for farmers to the demonstration plots, and share the results with them. In addition, sending daily or weekly messages to farmers' mobile phones can be very beneficial. It would also be useful if farmers receive training or field visits to agricultural universities or KVKs. Timely availability of leaflets and pamphlets for reading purposes should also be ensured.

### **Method to monitor the work done by FFS facilitators**

We reviewed the daily tasks and verified the data provided in the app. We also checked the photographs and attendance records that were uploaded. Additionally, we sometimes personally attended the FFS and collected feedback from the participants.

### **Findings from KIs with FFS - Facilitator**

During the CM-V visits, team members interacted with one facilitator one from Akola District and two from Jalgaon, totaling three checklists being covered in this survey. The facilitators played a key role in implementing FFS by organizing and conducting various demonstrations in farmers' fields to deliver information on climate-resilient technologies. They also planned the FFS by selecting a location and informing farmers ahead of time. In addition, facilitators provided awareness to farmers about the package of practices for specific crops, organize interactions among farmers, and motivated them to adopt organic and sustainable farming practices.

### **Climate resilient technologies demonstrated in FFS**

Climate-resilient technologies demonstrated in FFS include the use of own seeds, seed treatments, sowing across slopes, using organic fertilizers and sprays, using Dashparni and Nimboli Ark, and different types of traps. Farmers who attended FFS sessions were convinced of the need to adopt sustainable farming practices. During climate-resilient sessions, farmers focused on learning about new technologies, and some farmers adopted and practiced the demonstrated technologies.

### **Strategies adopted to mobilize Farmers**

To mobilize farmers, a timetable was prepared and submitted to the SDAO office four to five days before conducting the FFS in the project village. The timetable was then circulated to the host farmer. Invitations were sent to the Sarpanch, VCRMC, and Gram Panchayat members, and information was shared on WhatsApp groups by Krushi Tai. Approximately 20 to 25 farmers attended each FFS, and in Jalgaon, an innovative idea was implemented by sending invitations through postcards to farmers.

### **Key reasons for low participation**

Low participation by farmers in FFS could be attributed to improper communication and the timing of FFS during the peak period of the season. FFS should be conducted at a time that was convenient for farmers, and the time and day should be fixed accordingly. Classroom sessions should be organized in the evening and field sessions in the morning to encourage greater participation. New technologies and useful methods should be delivered during FFS sessions to create more interest among farmers, and IEC material should be circulated for learning purposes.

### **Exclusive FFS sessions for women farmers**

Exclusive FFS sessions for women farmers were also necessary. Currently, only two to three women farmers attended each session, Krushi Tai and CA need to work together to increase women's participation. To achieve this, Krushi Tai will work with CRPs, VCRMC, and SHGs.

### **Awareness about Climate Change**

Farmers were aware about climate change and global warming and had experienced its effects on their farms. The uneven distribution of rainfall and the appearance of new pests and diseases were some of the impacts of climate change reported by farmers. To cope with the adverse impact of climate change on farming, farmers were practicing proper tillage, using deep ploughing, own seeds, seed treatments, sowing across slopes, using organic fertilizers and sprays, and different types of traps. Farmers were also eager to adopt new climate-resilient technologies promoted by PoCRA.

### **Traditional techniques to cope with adverse climate impact**

Some of the demonstrated technologies, such as Integrated Pest Management, Bird Stops, Pheromone Traps, and *Nimboli* and *Dashparni* extracts for spraying, had been adopted by farmers. However, some farmers were hesitant to adopt new technologies such as BBF, which required more space for sowing, resulting in lower plant populations. Land holdings were decreasing, which was also a contributing factor. In some cases, farmers using BBF had seen good results, such as reduced costs of cultivation and lower pest and disease attacks. The use of BBF for sowing allowed for more space, aeration, and sunlight to reach the crops.

### **Feedback on the difference in yield between project and control plots**

It was been observed that the yield of project village plots was higher than that of control village plots. The difference in yield ranged from approximately 50 to 75 kg per acre, with project plots showing higher yield. The increase in yield can be attributed to various techniques and methods that were introduced during the Farmer Field School (FFS) sessions, such as seed treatment, use of bio-fertilizers, use of organic inputs, optimum application of in-organic

fertilizers and pesticides, adoption of use of own seeds, newly released disease and pest resistant varieties and timely agro-met advisory. These practices have resulted in increased awareness among farmers, which had led to higher yields and reduced cultivation costs.

### **Feedback on the quality and effectiveness of the FFS**

The quality of the FFS sessions conducted under the PoCRA was good, and it had contributed to increasing the quality and effectiveness of the FFS. Information was provided to farmers according to the crop cycle, making it more useful. However, more training materials and information brochures about new technologies in farming were required.

### **Farmer's awareness of organic farming**

Farmers in the project village were well aware of organic farming, and the FFS had provided them with training on organic farming technology. Some farmers were already practicing it to improve soil health, using bio-pesticides and vermi-wash. Some farmers were willing to undertake organic farming in the future.

### **Use of social media for awareness**

Most of the farmers were using smartphones and were very familiar with platforms such as WhatsApp and YouTube. These could be utilized to increase awareness among farmers.

### **Awareness of banned pesticides**

Farmers were aware of the banned pesticides and were not using there on their crops. They also had knowledge of alternative methods. However, more awareness creation was required to ensure that all farmers avoided using banned pesticides.

### **Efforts to reduce the production cost of farmers**

During the FFS, facilitators had educated farmers about reducing production costs by using own seed, homemade bio-pesticides, minimum tillage practices, and using organic sprays for the control of pest and diseases and application of insecticides and pesticides only after crossing ETL. Training had also been provided on soil health and improving organic carbon. Farmers had also interacted with each other and shared low-cost new technologies for reducing the cost of cultivation.

### **Opinion on agro-met advisory services**

Farmers required timely agro-met advisory to plan their crops from sowing to harvesting. Agro-met advisory should also provide information on market situations, rates, and weather updates. Approximately 40% of farmers followed the advisory and conducted agri-operation practices as per the advisory.

## FFS related recommendations by Expert

- Weather forecasting including weather parameters such as rainfall, wind-speed, temperature, humidity may be provided to farmers so that the farmers can prepare themselves on real time basis to cope up with different biotic and abiotic stresses.
- For late onset of monsoon, drought and prolonged dry spell mitigation strategies needs to be demonstrated on the field of host farmers.
- Use of cultural, biological and mehchanical with an integrated management approach and application of inorganic pesticides only when infestation was above economic threshold level needs to be demonstrated.
- Fields of host farmers should be reachable to the farmers of the village where farmers can easily access.
- Timings of field schools should be early in morning or late evenings so that most of the farmers can avail the benefits and attend.
- Demonstrations on preparation of compost, vermi-compost should be encouraged at host farmers for effective recycling of farm wastes and sustainable soil health e.g. PDKV Compost method, NADEP compost, etc.
- Literature in form of leaflets, folders, bulletins and booklets as regards improved cultivation practices and strategies to cope up with climate vulnerability and pest disease management should be provided during FFS.

## Adoption of BBF Technology

The beneficiaries using BBF technology were asked for the usefulness as in case of excessive rainfall this year, 47 percent from Project villages said that it helped in drainage of excess water from the field and 35 percent said it helped in avoiding water stagnation in the field, while 53 percent said it saved the seed from being overflowed, while 12 percent said that it increased the yield. This shows that there was lot of awareness has happened with the adoption BBF technology which helped them in effective drainage during high intensity rainfall.

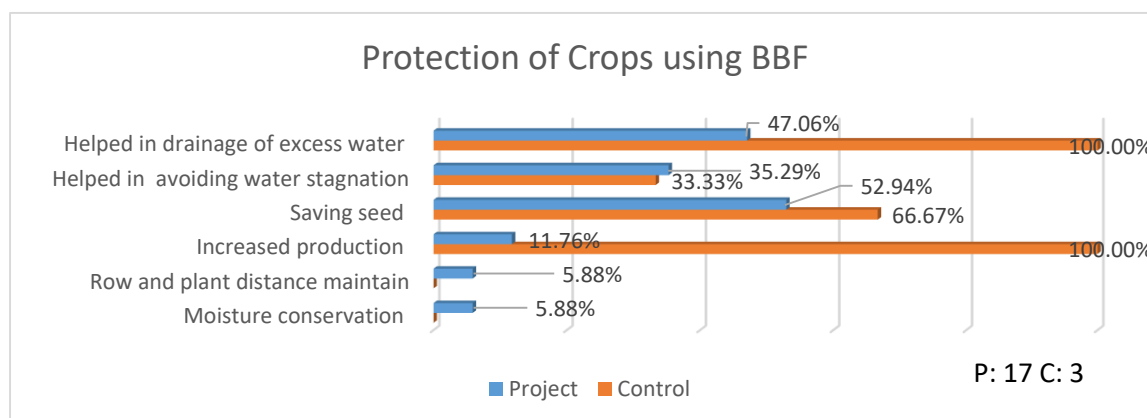


Figure 53: Protection of Crops using BBF

Beneficiaries were also asked if they faced any challenges using BBF, 71 percent from Project and 100 percent from Control villages said they faced problems in intercropping. Another issue was difficulty in intercultural operations was reported by 12 percent of beneficiaries from Project villages (P:17, C:3)

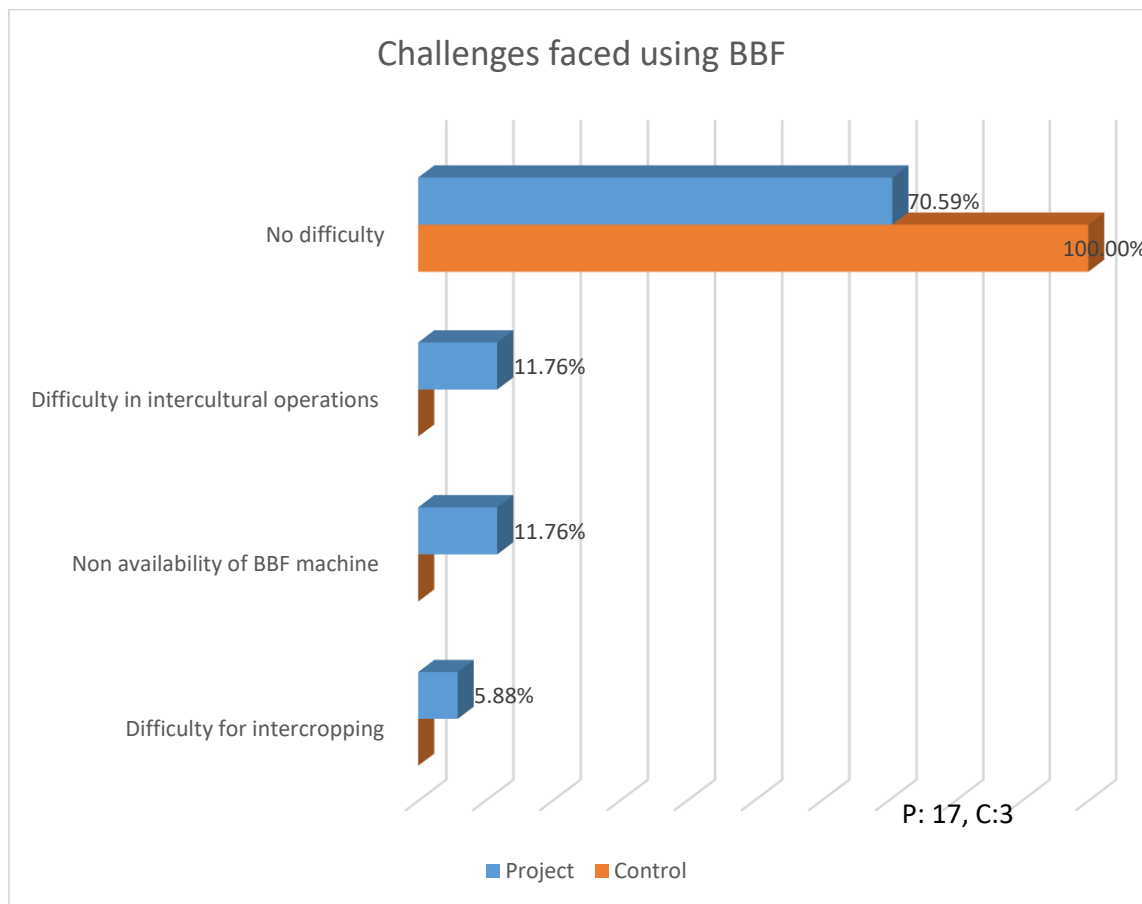


Figure 54: Challenges faced using BBF



## 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-V.

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).

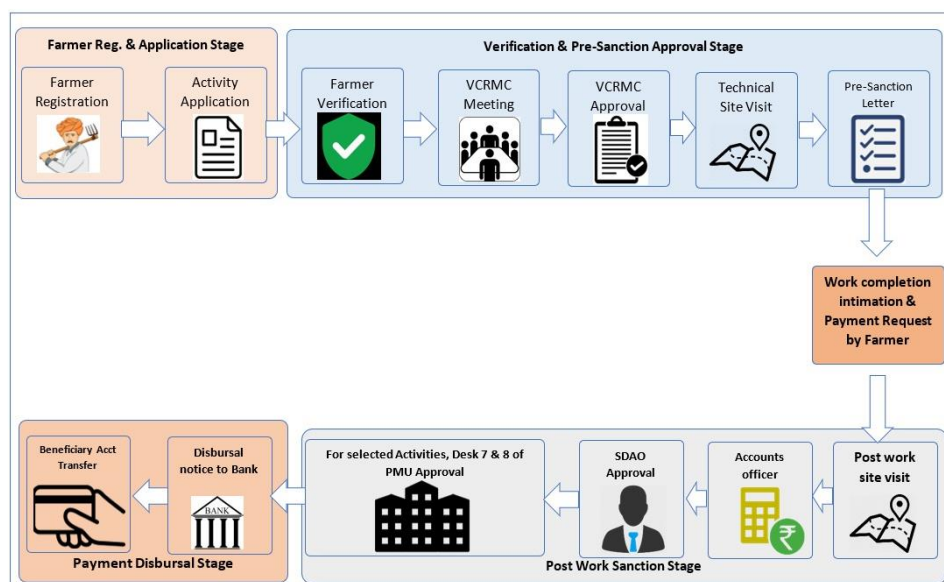


Figure 55: DBT Flow Chart

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

## Seed Production

Total 8 beneficiaries in project and 3 in Control villages reported seed production activity, It was it was from their reports that Soybean happened to be most preferred crop for seed production in both Project and Control villages, with data project 88 percent for Soybean in Project and 67 percent in Control villages. It was followed by Pigeon pea figuring 13 percent in Project and none in Control. Interesting to note that 34 percent respondents from Control

villages said they had taken up seed production for Wheat, while none responded for this major crop in Project areas.

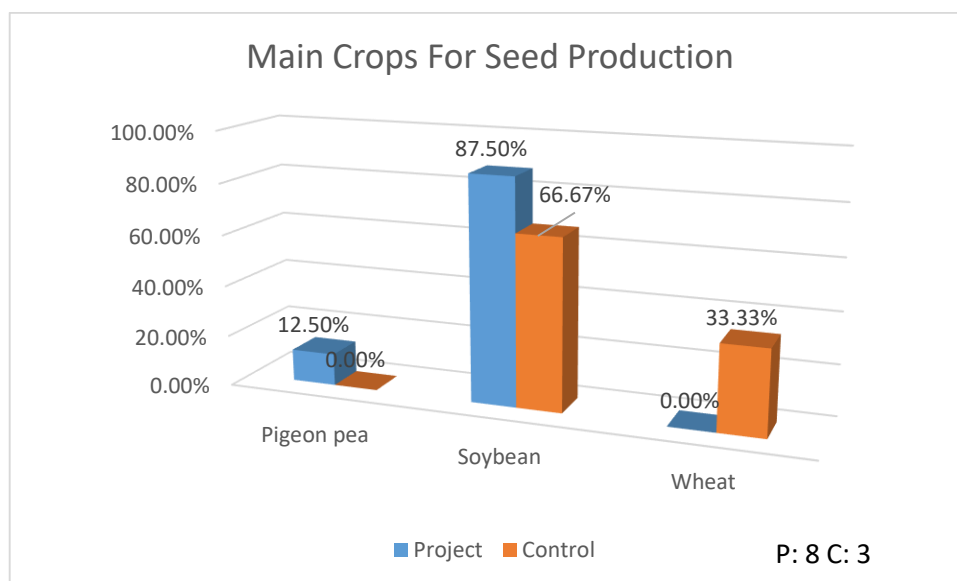


Figure 56: Main Crops for Seed Production

When asked about what are you preferred varieties for seed production, 88 percent from Project villages said JS 335 (Soybean), while it was 33 percent preferred in Control villages. The Tur variety BDN-716 was preferred by about 13 percent of respondents for seed production in Project Villages, while the figure was 33 percent in Control. Another variety MAUS-71 of Soybean also figured up for seed production in Control Villages with 33 percent respondents, while none named it in Project villages.

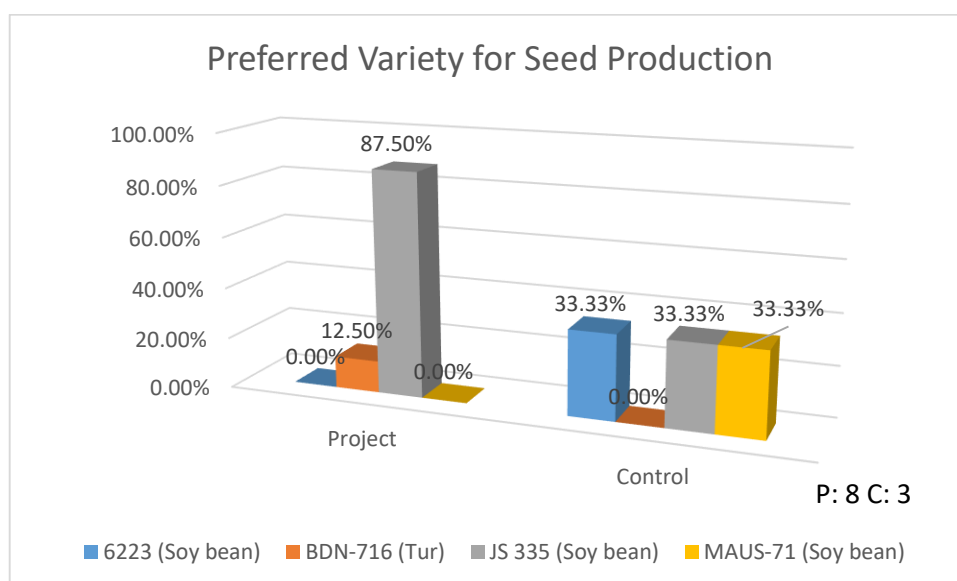


Figure 57: Preferred Variety for Seed Production

As a part of Survey it was also asked from the beneficiaries, about how much area was covered under seed production, it was about average 2.4 ha in both Project and Control villages.

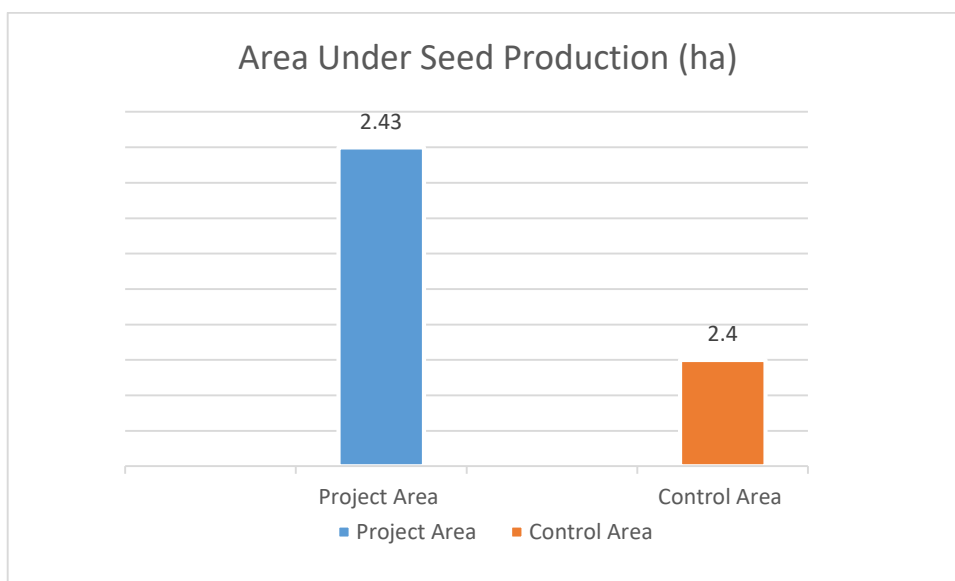


Figure 58: Area Under Seed Production

When enquired about the source of seed purchase from the beneficiaries, about 88 percent named Mahabeej in Project Villages, while 67 percent from Control. Farmer Producer Company was second preference by respondents from Project Villages figuring about 13 percent, none from Control named FPC. While, 33 percent from Control villages said that they purchase seed from other sources and none from Project areas.

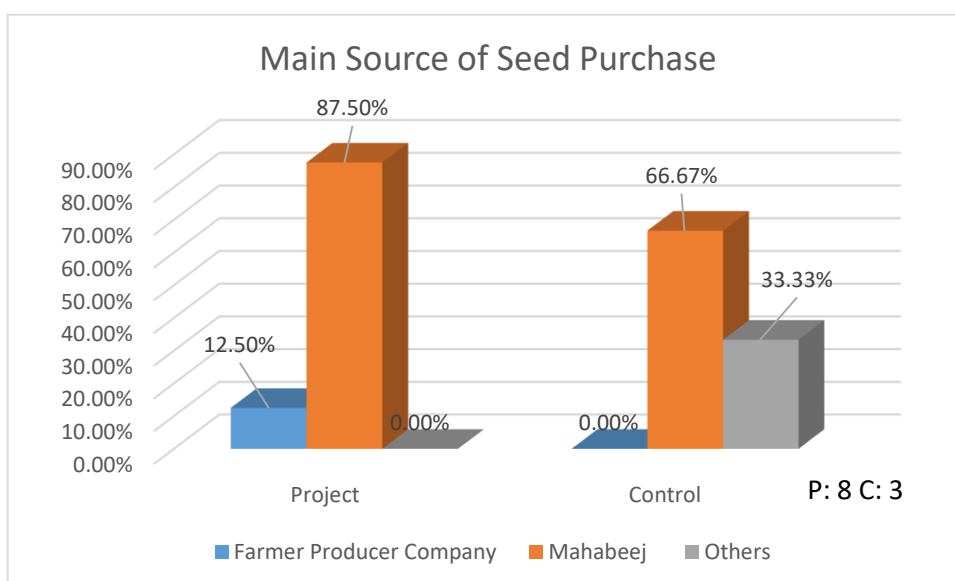


Figure 59: Main Source of Seed Purchase

As a part of Survey, the beneficiaries were asked about if they have received any trainings for Climate resilient seed production. All the beneficiaries from Control Villages said that they have received training for Climate Resilient seed production, while none from Project Villages had received such training!

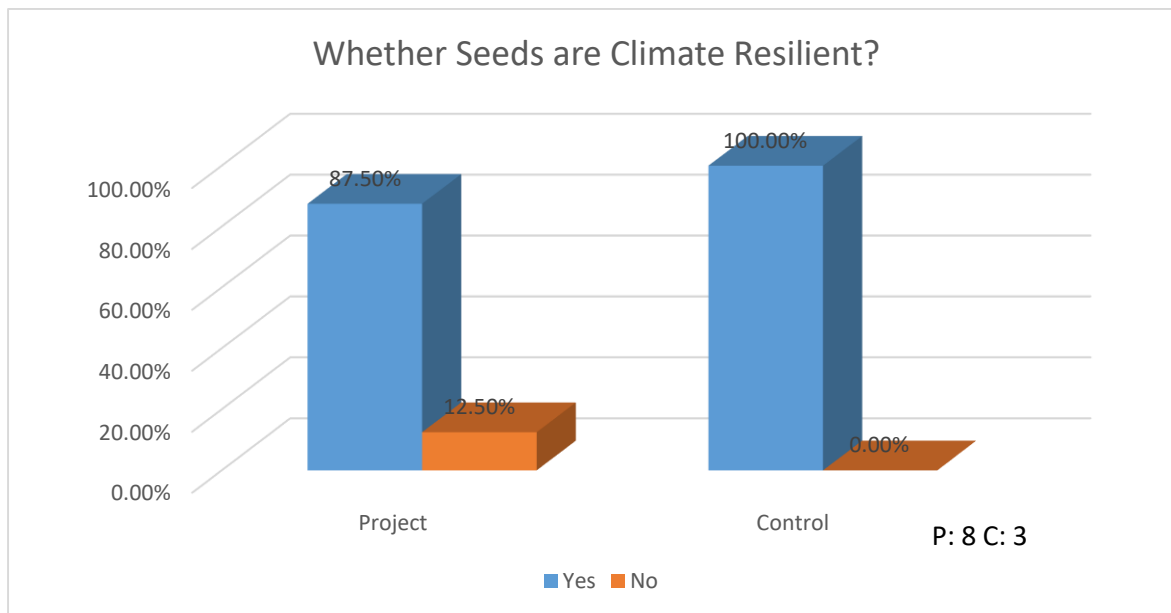


Figure 60: Whether Seeds are Climate Resilient?

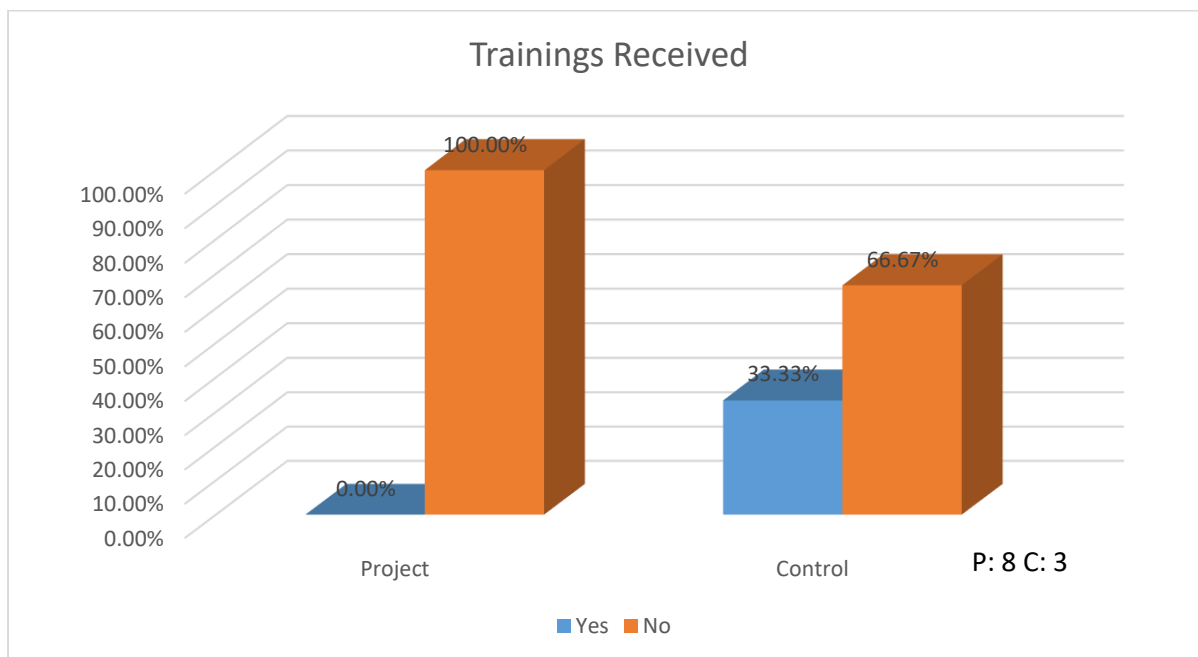


Figure 61: Trainings Received

On being asked how many years they are involved in Climate Resilient seed production, the beneficiaries from Project villages said they have more than 9 years of experience in this field, while respondents from Control villages said that they have about 1 year experience in this seed production.

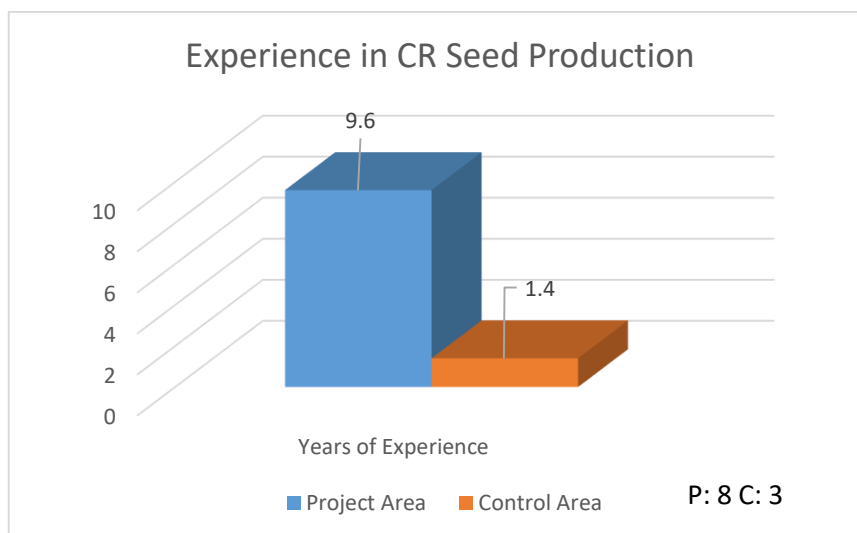


Figure 62: Experience in Climate Resilient Seed Production

When asked about if they are able to sell/market their agriculture produce from this activity, all the respondents from Project and Control replied affirmatively.

On being asked which was the main organization with which you had tied up to sell their seeds, 67 percent from Control villages named Mahabeej, while it was 63 percent in case of Project Villages, 12.5 percent farmers had tied up with FPC from Project villages, but none from Control. Thirty-three percent farmers from Control sell their produce to other market.

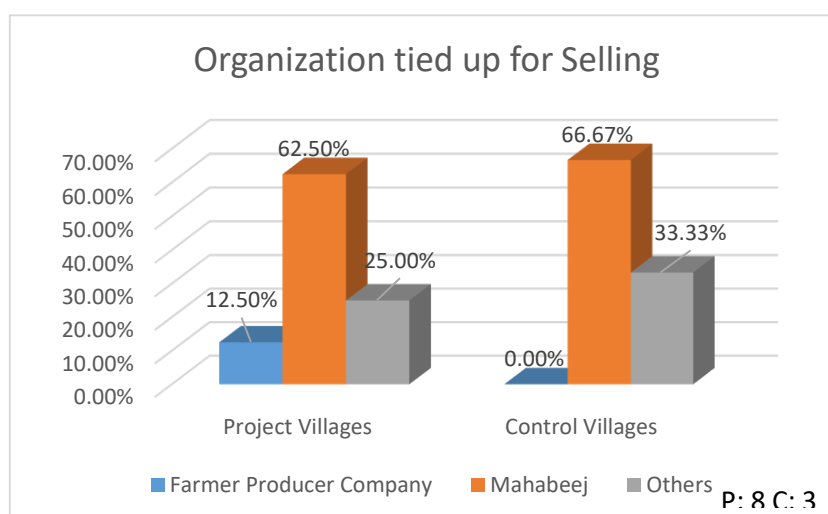


Figure 63: Organization tied up for Selling

## Benefits from Climate Resilient Seed Production

It was also asked if they have been benefitted from doing climate resilient seed production activity, all of the respondents from Project and Control villages replied affirmatively as it increases their income. Sixty Seven percent of respondents from Project Villages said it increases the availability of climate resilient seed for cultivation, 50 percent said it support in strengthening the seed production business, 13 percent said they get access to quality seeds. Thirty three percent respondents from Control villages agreed to access to quality seeds and also there were more financial benefits than growing regular crops.

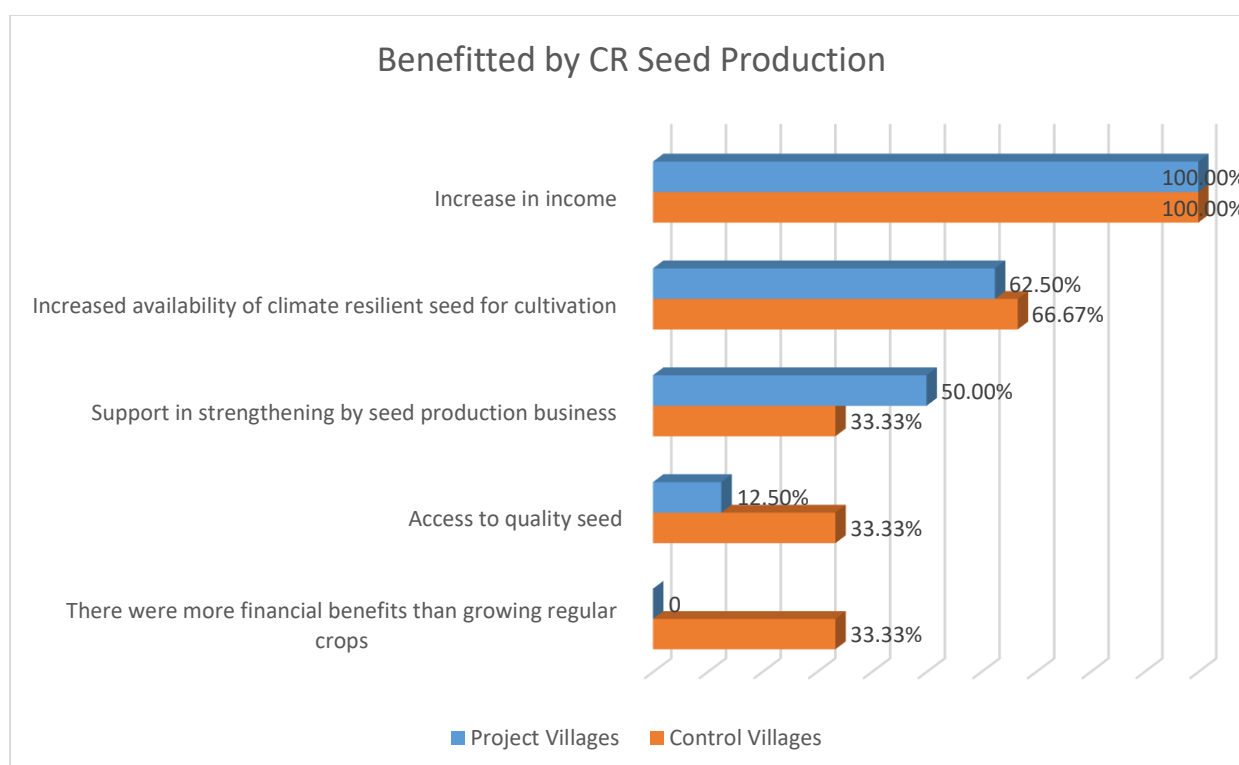


Figure 64: Organization tied up for Selling

## Horticultural Plantation

As a part of CM-V total of 11 farmers from project areas and 6 from Control were identified for Survey. They were initially asked about which horticultural crop they have planted in this program. It was observed that 82 percent respondents had planted Orange in Project villages, while it was 50 percent in Control. The second preference was given to Guava, of which it was 17 percent from Control villages and 9 percent from Project villages. Nine percent respondents from Project areas had taken up Custard apple, while it was none in Control.

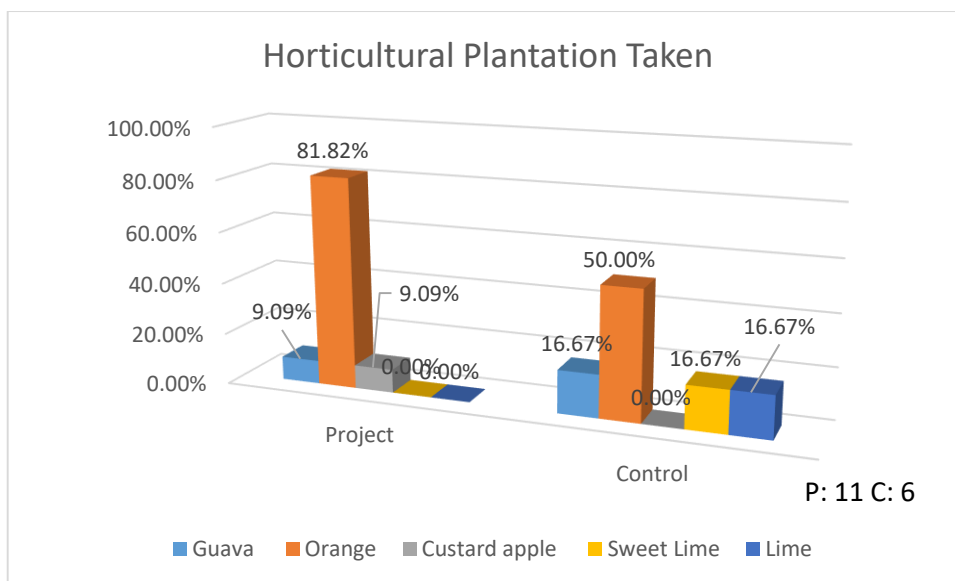


Figure 65: Horticultural Plantation Taken

The total area under horticultural plantation in Project was about 1.91 ha in Control area, while it was less than 1 ha in Project area.

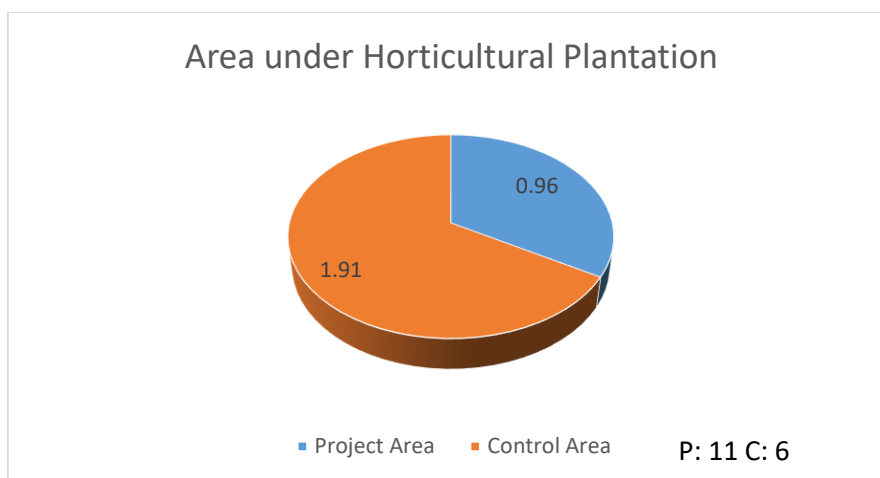
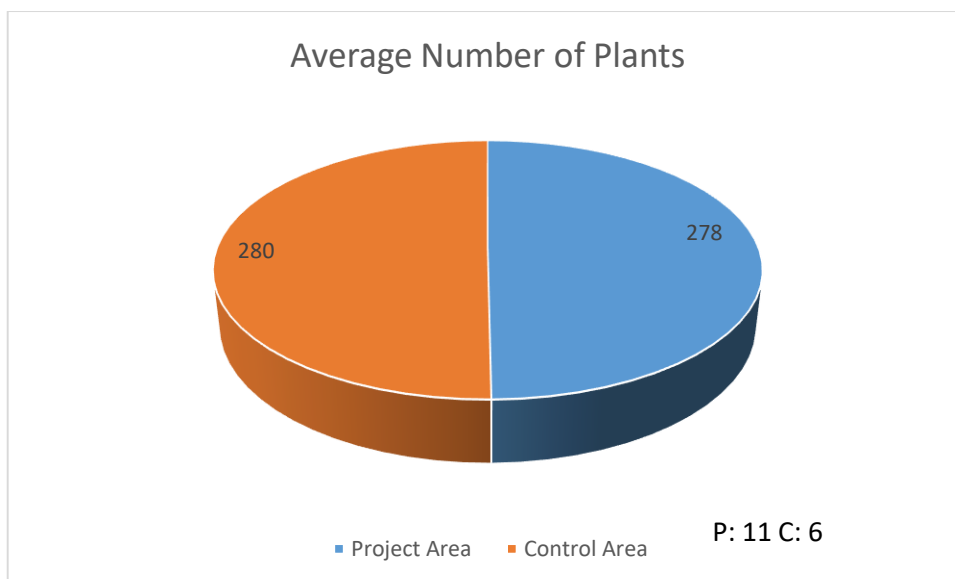


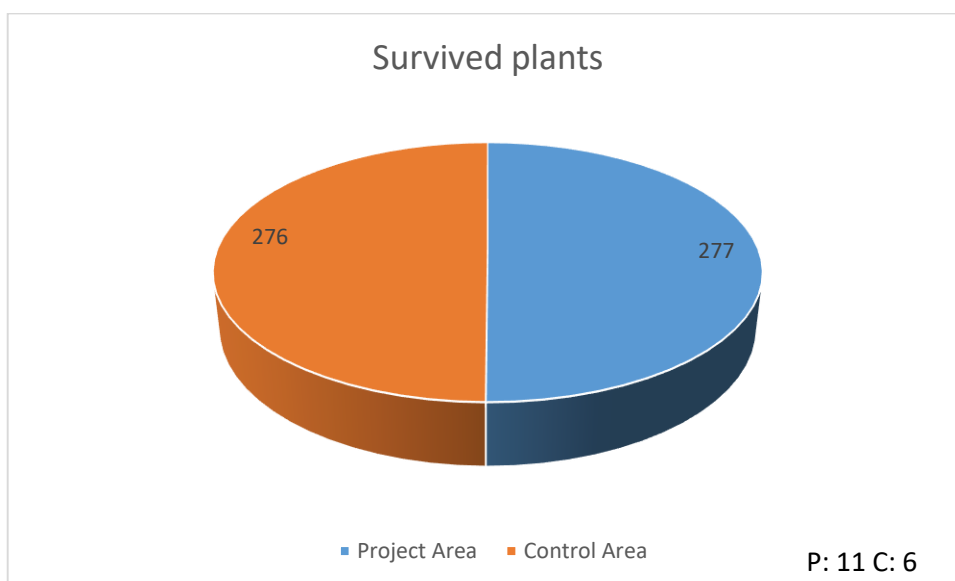
Figure 66: Area under Horticultural Plantation

When asked about number of plantation taken up, it was more or less same number as per the response from the both the areas. The response was 280 from Control, while it was 278 from Project area.



*Figure 67: Average Number of Plants*

As per the response regarding the survival rate of the plants, the respondents from Project said it was 277 and Control village was 276.



*Figure 68: Survived Plants*

When questioned about the source of purchase of seedlings, about 64 percent from Project purchased their seedlings from Government approved Nursery, while 67 percent respondents from Control villages said they prefer Government Nurseries.



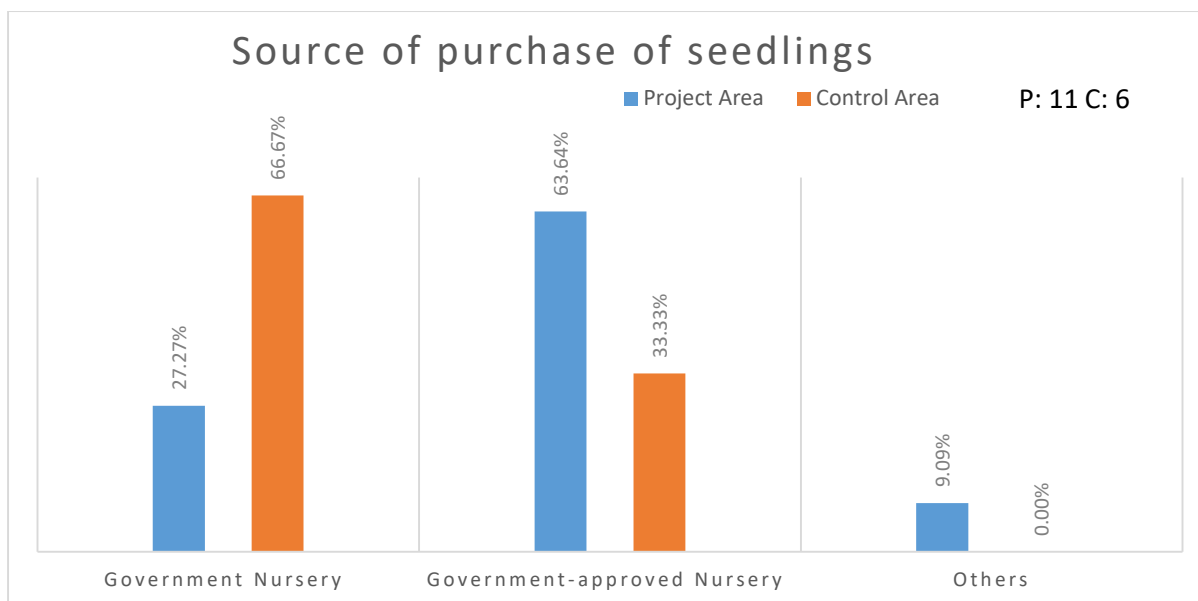


Figure 69: Source of Purchase of Seedlings

When enquired about installation of Drip Irrigation in their plantation, 67 percent from Control replied affirmatively, while the figure was 55 percent in Project Villages. About 45 percent have not installed Drip system in Project Villages, while in Control it was 33 percent.

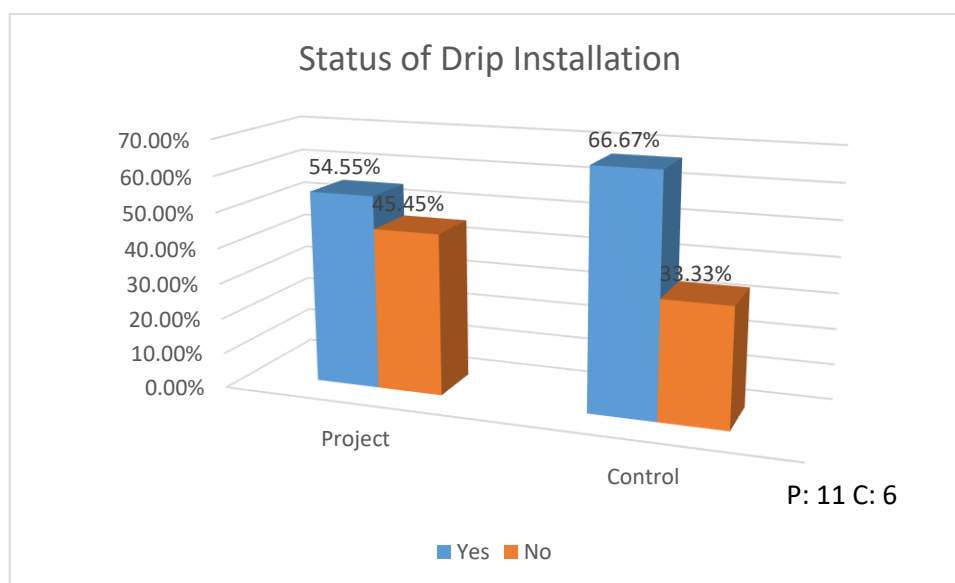


Figure 70: Installation Status of Drip

When asked about the reason for not installing Drip Irrigation System, 20 percent said they didn't find it useful and similar number said they didn't had water supply for irrigation in Project Villages, while most of the respondents from Control said that they didn't had adequate money for this investment.

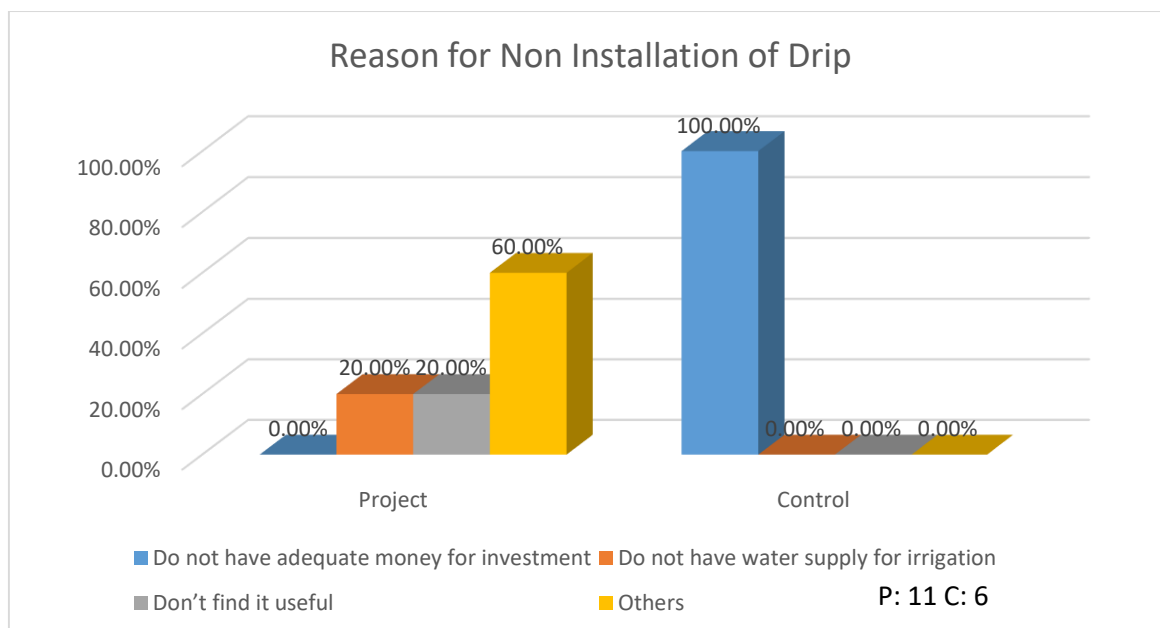


Figure 71: Reason for Non- Installation of Drip

The crucial question of production from these horticulture plantations had started or not also came up, as a part of questionnaire. About 82 percent from Project and 67 percent from Control said that production had started in these plantations.

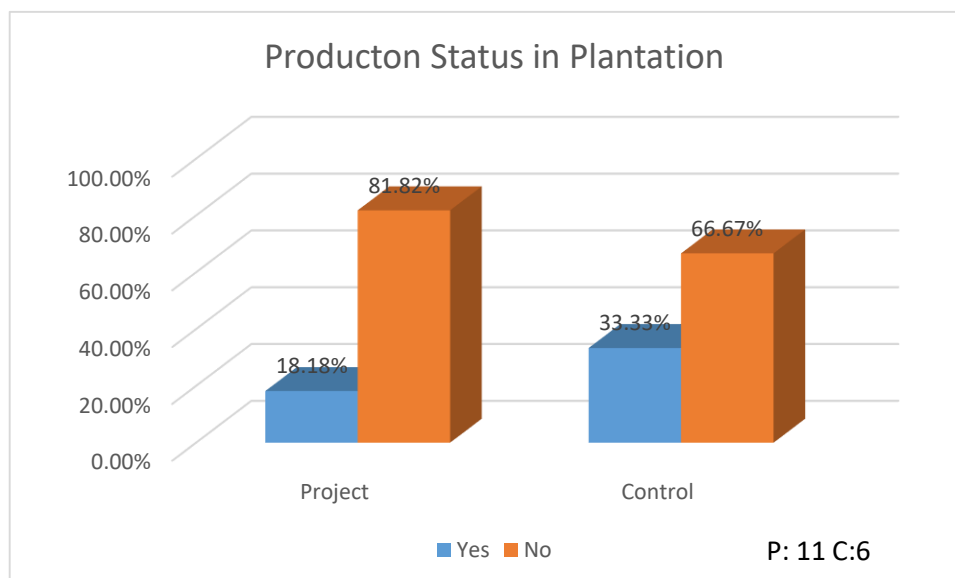


Figure 72: Production Status in Plantation

When asked whether they are able to sell their agriculture produce from this activity, the response from Project Villages was 50-50; while respondents from Control Villages said it was easily sold in the Market.

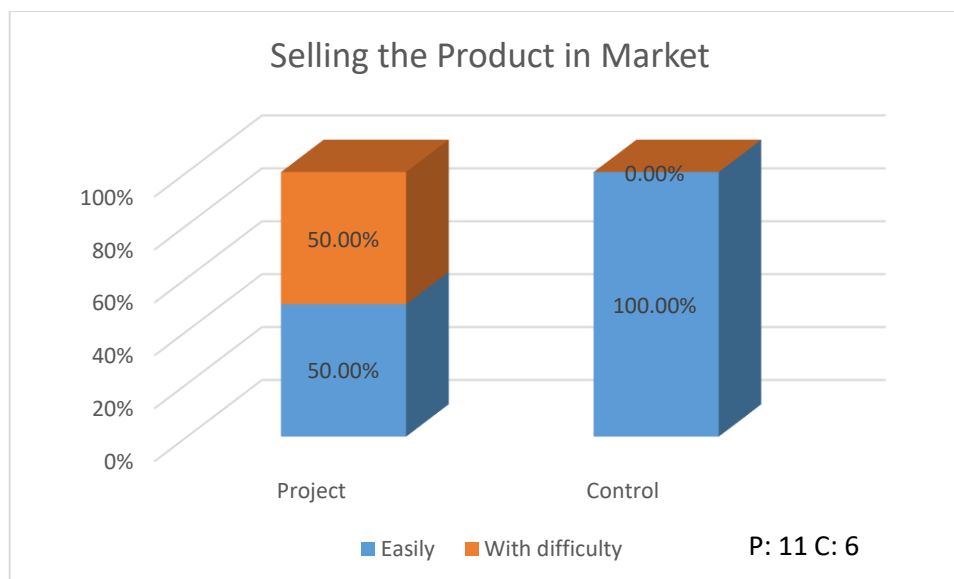


Figure 73: Selling the Product in Market

### Small Ruminants

As part of the CM-V, there were only 4.8% beneficiaries of small ruminants as the activity was kept on hold for new applications. For landless farmers, small ruminants was the only activity available under PoCRA and hence most of the landless families are demanding to restart the activity. As part of the activity, they have taken 1 Buck and 10 goats.

As per CM-V Survey, seven beneficiaries were questioned from Project Villages, while three from Control. It was observed that none of them had received training for this activity, 67 percent from Control said that they were not aware from where to get training, while 14 percent from Project Villages replied the same. Fifty Seven percent from Project villages said that they were not aware that it was compulsory to undergo training for this activity.

### Activity Status

When asked if they are still practicing the activity, 57 percent from Project Villages replied yes they are still practicing, remaining 43 percent said they are not practicing the activity. When asked about the reason for not practicing this activity currently, all the respondents from Project Villages said that they sold the goats, as they needed money urgently, while the respondents from Control Villages cited the reason of limited grazing area and non-availability of feeds.

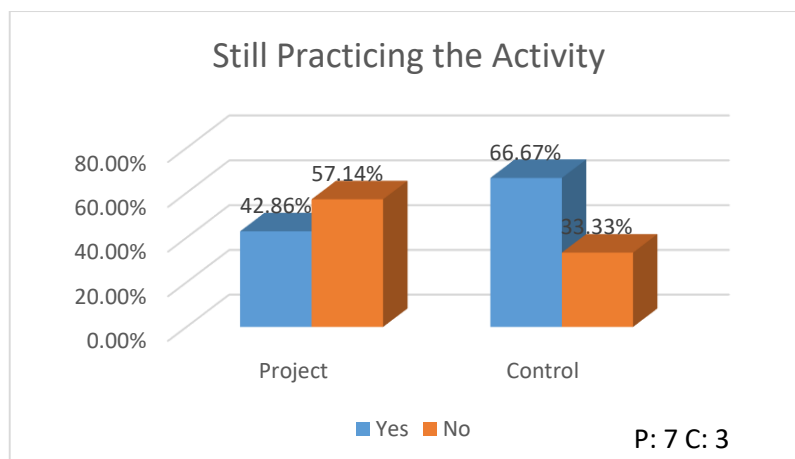


Figure 74: Activity Status

They were also asked for minimum how many years they had continued this activity, respondents from Project villages said they carried it for about 2 and half years, while respondents from Control Villages said more than 3 and half years.

### Status of Insurance

One more response that was interesting was observed that only 43 percent of beneficiaries from Project Villages have covered their ruminants with insurance, while the figure was 100 percent in Control Villages. Fifty three percent respondents from Project villages have not covered their goats with insurance! The respondents from Control Villages also said that insurance was purchased from Cooperative Societies, while 42 percent respondents from Project Area said they had purchased it from insurance companies.

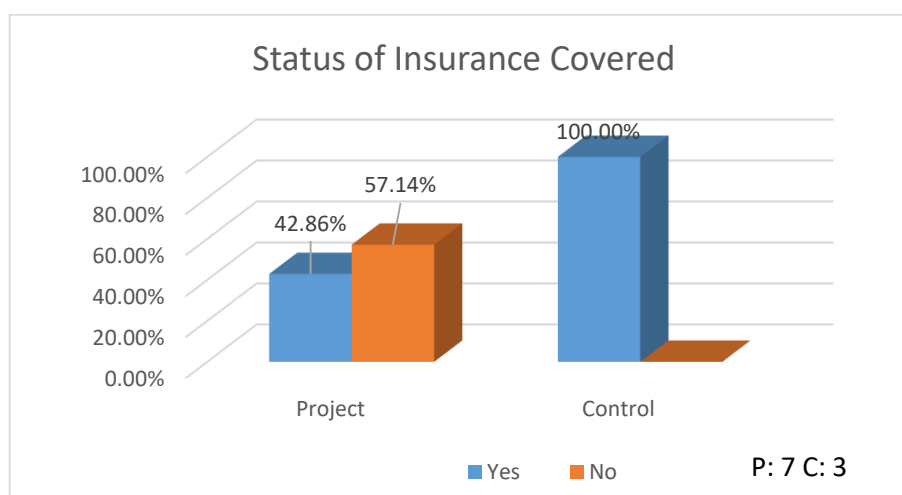


Figure 75: Status of Insurance Covered

When asked about the availability of Veterinary Services, 71 percent from Project Villages said replied no such facilities are available.

On being questioned about selling the output product from this livelihood activity, 86 percent from Project Villages and 100 percent from Control opted the option Rural Haat, while 14 percent from Project Villages said that they sold them outside their villages.

As a part of questionnaire, it was asked if they found the market for purchase of goats suitable, 86 percent from Project villages and 100 percent from Control replied affirmatively. It was also asked if they know about what specific conditions and responsibilities that have to be followed by them after taking benefits of this activity, 43 percent from Project Villages they said they knew that the business had be continued for atleast 3 years and 14 percent said that ruminants had to be vaccinated after every one year. There was no response for the question on getting those insured and undergoing training for small ruminants. All the respondents from Control villages said that they have taken insurance.

When asked about how they were benefited from this activity, from Project villages, 43 percent said it was increase in income, 29 percent said it increases self employment opportunities, while 29 percent had an opinion that they were not benefitted at all.

### **Poultry**

In CM-V Survey, we interviewed 2 respondents from Project Villages and 1 from Control. It was found that none of them have received any training on Backyard Poultry. Out of 2 from Project Villages was still practicing Backyard Poultry, the other said that all the birds have died, so he was not practicing that activity.

### **Apiculture**

In CM-IV, *Farmer Field School* were organized to train the beneficiaries who had opted for Apiculture activity. Therefore, as a part of CM-V Survey, we had 2 beneficiaries for this Survey and none was reported from Control.

It was observed that none of the beneficiaries had received training, when asked regarding the same. They said they know training was being given by Agricultural Department, but don't know from where to get the training. When asked if they are still practicing the training, both the respondents replied that they are not practicing what they were trained. They were not clear why they have stopped practicing, when asked about it as per questionnaire. When asked whether they were able to sell the produce from this activity, they said that production had not started. On being asked if they faced any difficulty, the answer was split to 50 percent saying Yes and 50 percent saying No.

They said that they were not aware of any guidelines for this activity, when asked to list the difficulties faced to accessing project benefit. On being asked how they are being benefitted from this project, 50 percent response was that they were not benefitted till now, while other 50 percent had no clear response.

### **Polyhouse**

As part of CM-V, total 1 beneficiary was interviewed for the Polyhouse activity in project as compared to no beneficiary in control villages. The first question was asked whether he had received any training for using this technology, he replied none. When asked what did he cultivate in this Polyhouse, he replied flowers. He said he didn't received any technical know-how to cultivate, when asked as a part of questionnaire. When asked how frequently he used this asset, his response was regularly. He also said that he had spent about Rs. 25,000 as the cost of cultivation, replying to question on the same. He said he can easily sell his produce from this activity to the market located in the nearby district town. On being asked what was his total income from past one year, the response was Rs. 1,75,000.

When asked about where does he disposes the fabric of Polyhouse, if damaged, his replied was not sure. He said he takes 3 crops within one year in his 0.5 acre occupied Polyhouse and total yield per cycle was about 80 quintals, which he sold directly to market. The per kg cost was about Rs. 50, with operation cost of about Rs. 24,000 per cycle.

On being asked if he faced any difficulty in acquiring this activity, his reply was none.

### **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.

### **Drip Irrigation**

Majority of total DBT beneficiaries were from Drip Irrigation system, 35 percent in Project and 36 percent in Control were for Drip Irrigation activity. The percentage was just double from CM-IV Survey report. As per CM-V Survey beneficiaries were asked how frequently they had used this irrigation method, 89 percent from Project and 95 percent from Control reported that they use it only on requirement, while 6 percent from Project said they use it seasonally with same response of 5 percent from Control Villages and 6 percent from Project villages also said that they are not using it currently.

(P:54, C:39)

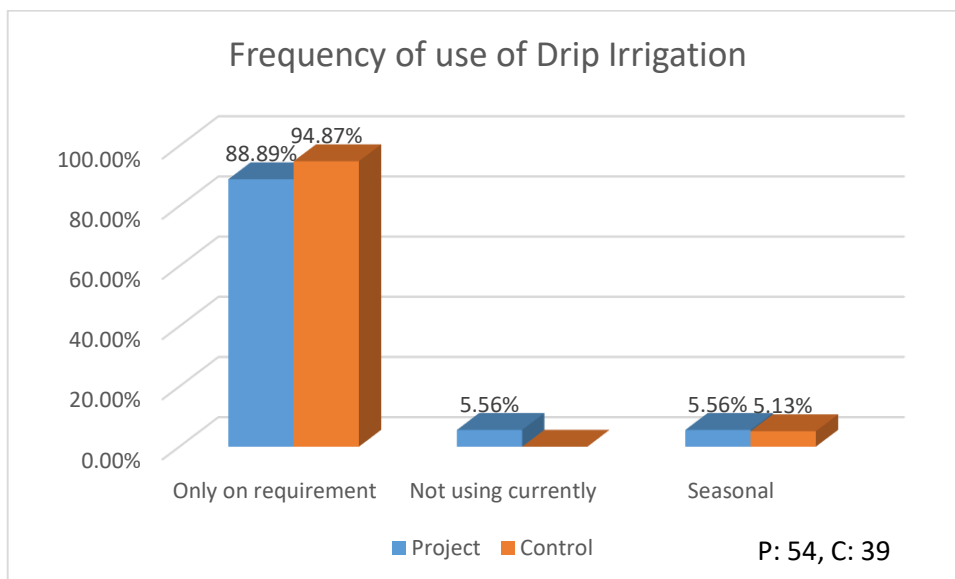


Figure 76: Frequency of Use of Drip Irrigation

Area covered under drip irrigation was about more or less same in both Project and Control villages, with area reported about 3.52 hectares in Project and 3.56 hectare in Control villages.

On being asked on which crop was being irrigated with this method, 90 percent from Project and 92 percent from Control villages replied Cotton, followed by Maize with respondents from Project villages reporting 25 percent and 18 percent from Control.

It was also asked if fertigation was used with Drip method or not, 56 percent from Project and 59 percent respondents from Control replied that they do not give fertilizer using this method.

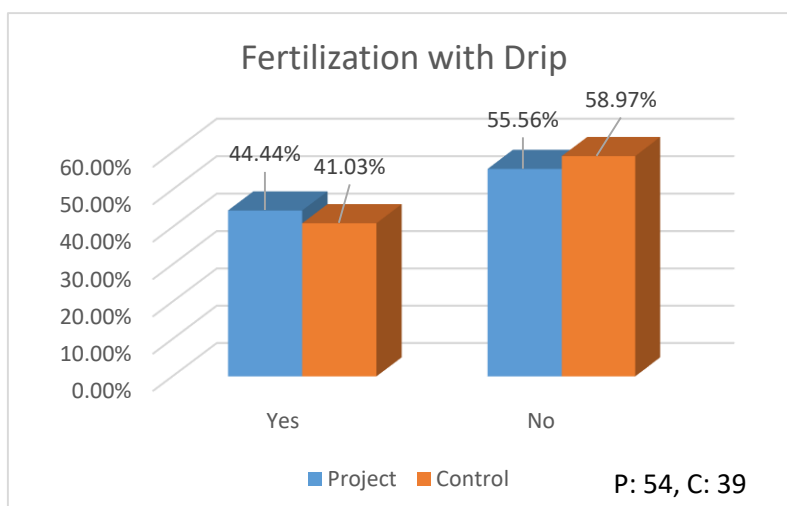


Figure 77: Fertilization with Drip Irrigation

When questioned about the benefits of using Drip irrigation method, 68 percent from Project and 77 percent from Control Villages said it increased production, 52 percent from Project and 67 percent from Control Villages said it increases their income. When asked if it increases the availability in water for protected irrigation, 44 percent from Control and 31 percent from Project replied affirmatively. About 28 percent from Project and 15 percent from Control areas said it increases water availability during dry spells.

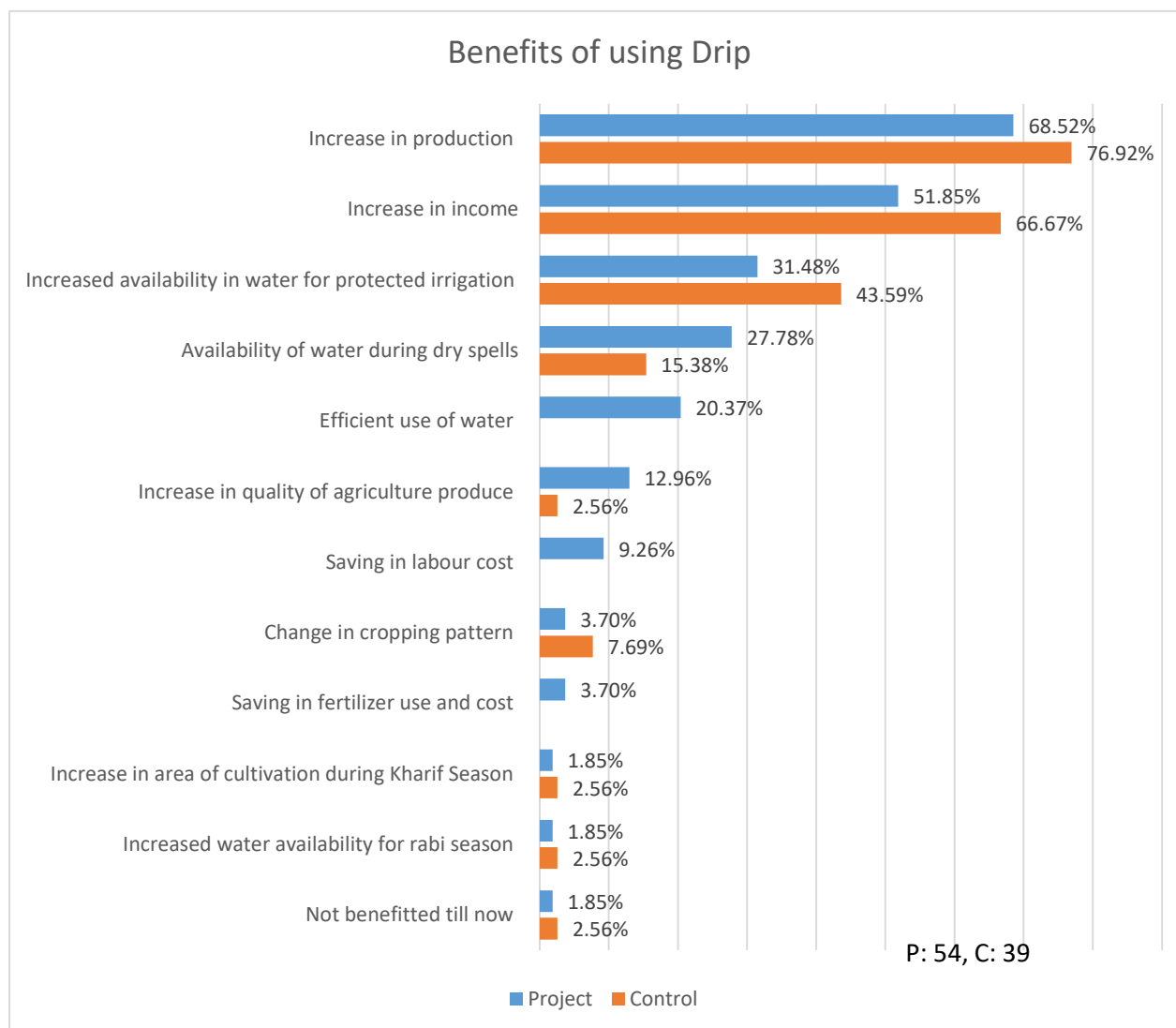


Figure 78: Benefits of using Drip Irrigation

## Sprinkler

This activity ranked second in CM-V, in which 28 percent from Project and 36 percent beneficiaries from the control villages as per data shared by PMU, though there was increase of about 15 percent in Project and about 23 percent in Control areas from CM-IV Survey. As per Survey it was found that about 3.35 ha of land was being irrigated with this system (P48, C: 37)



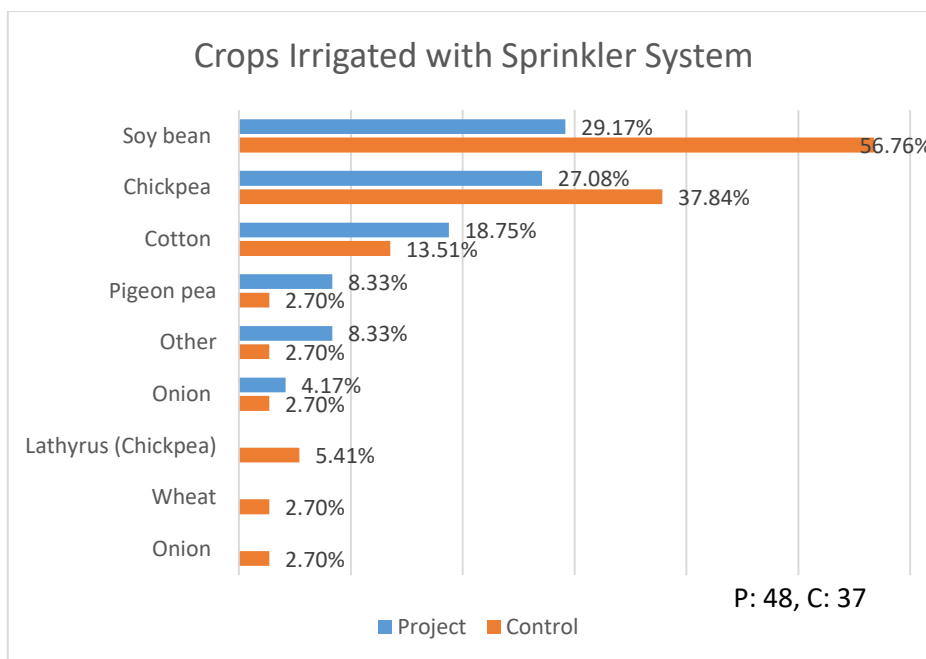


Figure 79: Crops Irrigated with Sprinkler System

As a part of questionnaire it was also asked how they have been benefitted from Sprinkler System, about 75 percent respondents from both Project and Control villages said it saves labour cost. While, 38 percent from Project and 33 percent from Control said it increases the quality of agriculture produce and 49 percent from Project and 29 percent from Control villages said it uses water efficiently.

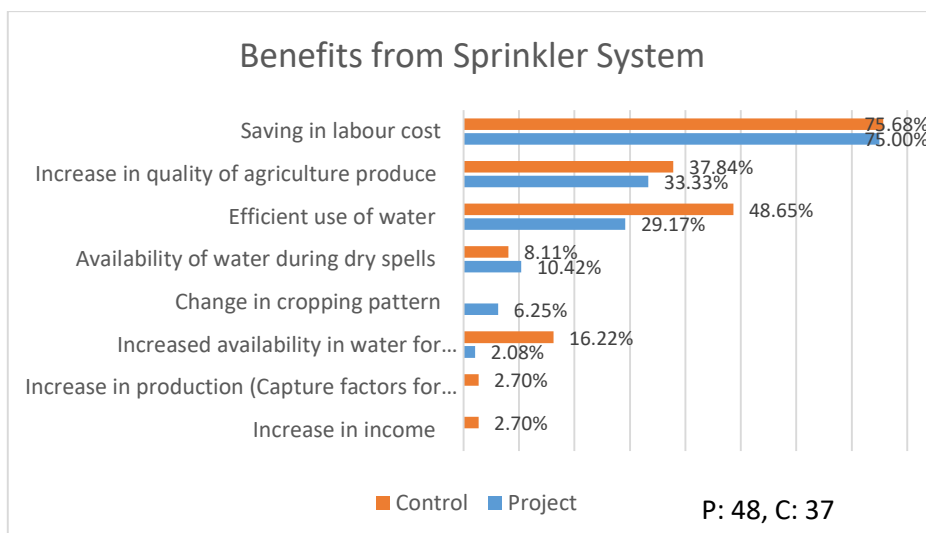


Figure 80: Benefits from Sprinkler System

## Pipes (HDPE/PVC)

A total of 6 percent beneficiaries from Project and 4 percent from Control villages had applied Pipes (HDPE/PVC) under DBT. As per Survey data, 92 percent from Project and 67 percent

from Control villages have received PVC pipes, while HDPE pipes were received by 8 percent beneficiaries from Project villages and 33 percent from Control.

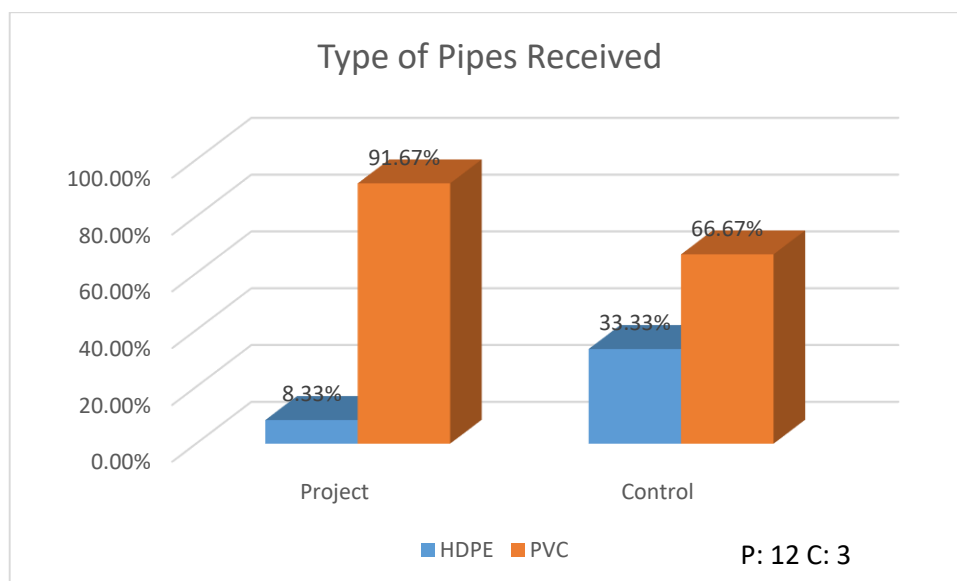


Figure 81: Types of Pipes Received

When asked about the frequency of using pipes for irrigation, 92 percent from Project and 67 percent from Control said they use only when it was required. It was also observed that only 8 percent respondents use these pipes regularly and 33 percent from Control use it seasonally.

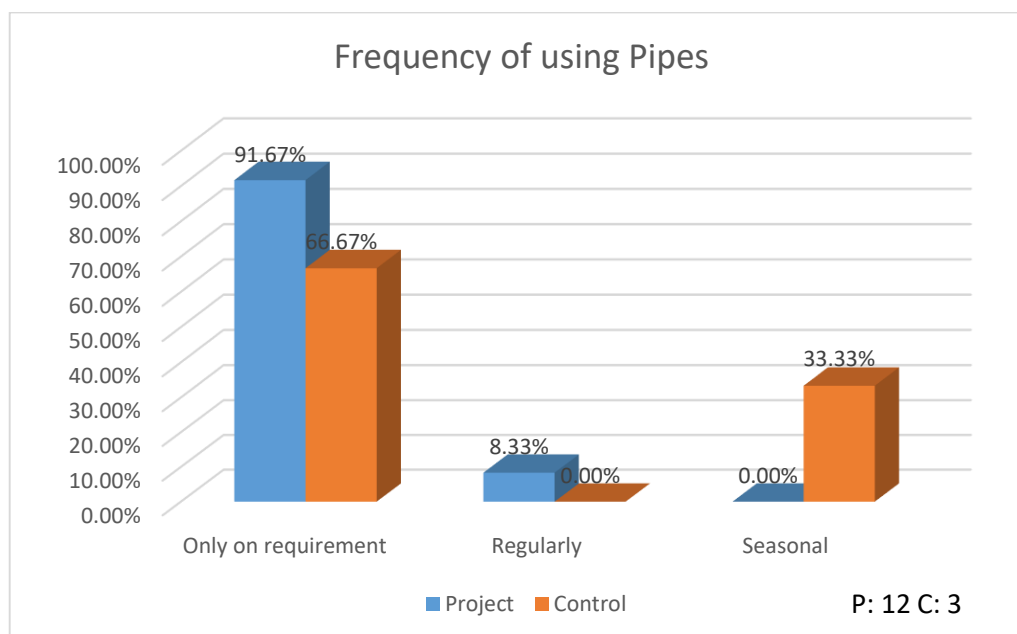


Figure 82: Frequency of using Pipes

It was asked to the beneficiaries for what purpose they are using the pipes, 50 percent Project beneficiaries said they are using it for transport of water from well to pond. About 33 percent

from Control villages and 17 percent from Project said they using them to lift water from river or canal.

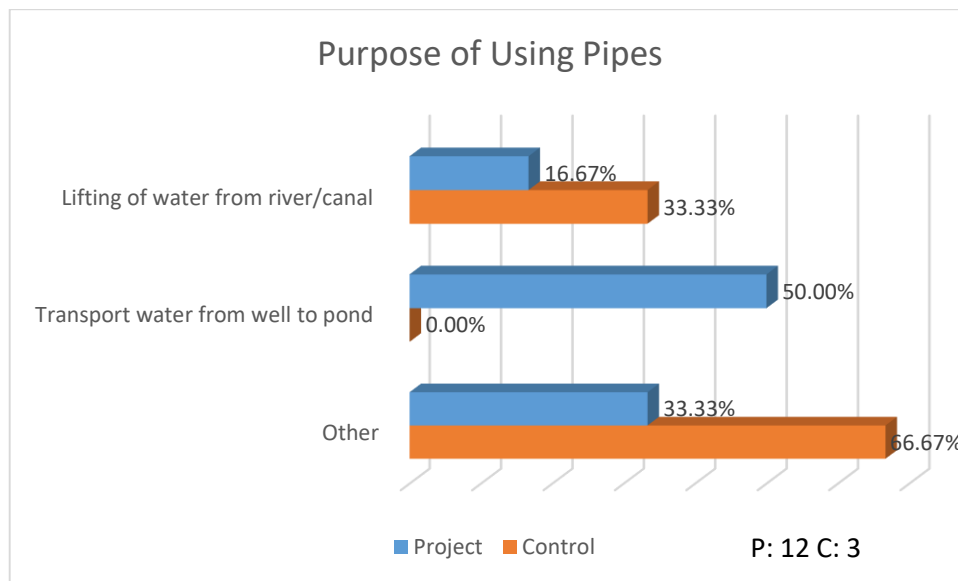


Figure 83: Purpose of Using Pipes

As per questionnaire, it was asked on which system of irrigation these pipes are used. In Project Villages, 42 percent said they use it for Sprinkler System, 25 percent said flood irrigation, 17 percent said they use it for furrow irrigation and only 8 percent use it for both Sprinkler and Drip system. The data from Control villages are almost similar about 33 percent in all the cases of using these pipes.

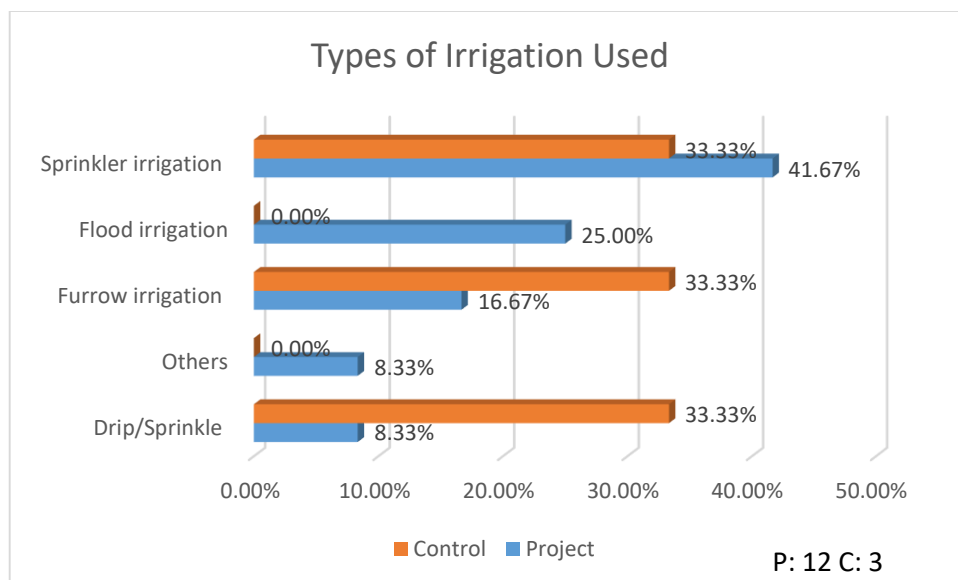


Figure 84: Types of Irrigation used

When being asked for the reason for not using the pipes during the period of Survey, 50 percent from Project and 67 percent from Control said that they do not have water availability

for irrigation, while 17 percent from Control said that their pipes were damaged. About 33 percent from both Project and Control villages said that they did not find pipes useful at all.

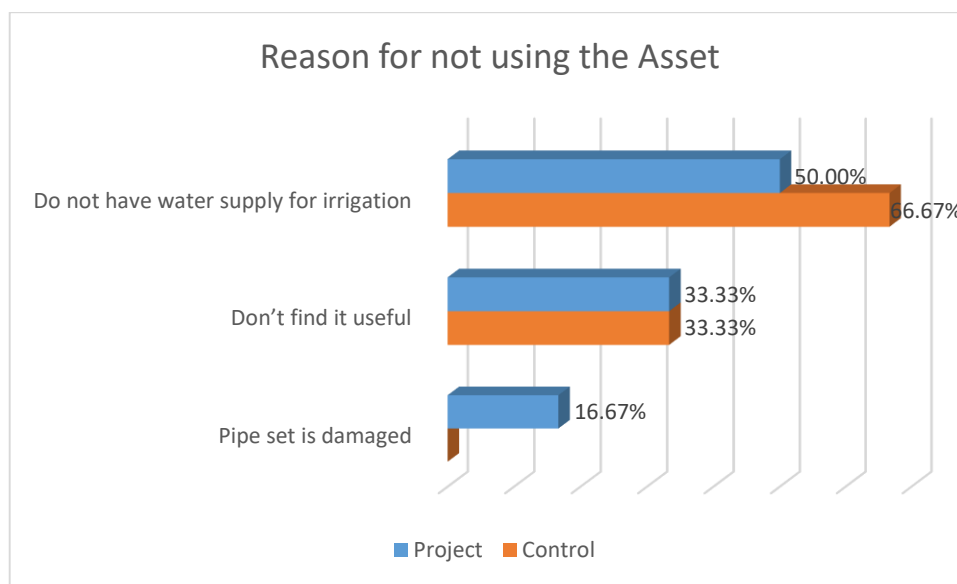


Figure 85: Reasons for not using the Asset

In CM-V Survey, it was observed that these pipes were being used in more than 3 hectares of land in Project areas and more than one hectare of land in Control villages.

### Water Pumps

There was drastic reduction in the application for Water pumps as the activity was kept on hold. Out of total DBT applications, only 1 percent from Project and about 2 percent from Control had been benefited with this activity. As per Survey data, three farmers from Project and one from Control villages had been interviewed. There was poor response from Control beneficiary.

As per questionnaire they were asked for what purpose they use the water pump, the response was to pump out ground water and transport water from Well to Pond with 50:50 ratio of response from Project Villages. The total area irrigated was about 3 hectares in Project villages. They are using 5 HP engine as per the response from questionnaire. On being asked about using capacitor, the response was 50:50 in both Project and Control Villages. In a response to questions, the beneficiaries from Project villages said that they are using 2-inch diameter pipes with the motor.

When asked if they are benefitted from this activity, all of them agreed that it Increased availability in water for protected irrigation followed by increase in income and crop production.

## DBT Beneficiaries







## Asset Verification of Beneficiaries

As a part of the CM-V Survey, asset verification was done as per approved methodology. The verification was undertaken for PoCRA beneficiaries for individual activities (Table 12), NRM activities and FPOs (Annexure IV and IV) as part of the project.

During CM-V, the Individual asset verification was done for 17 DBT- Pre-Sanctioned individual beneficiaries and 143 DBT-Subsidy Released beneficiaries. It was observed that Drip Irrigation and Sprinkler Irrigation were more popular followed by Pipes (HDPE/PVC) and Seed Production activities. The details are presented in Table 12.

Table 12: Individual activity Asset Verification

| Activities                                 | Physically Present |                    | Total Verification Done |
|--------------------------------------------|--------------------|--------------------|-------------------------|
|                                            | Yes                | Under Construction |                         |
| <b>DBT- Pre-sanctioned</b>                 | <b>12</b>          | <b>1</b>           | <b>17</b>               |
| Apiculture                                 |                    |                    | 2                       |
| Backyard Poultry                           |                    | 1                  | 1                       |
| Drip Irrigation                            | 7                  |                    | 8                       |
| FFS Host Farmer Assistance                 | 1                  |                    | 1                       |
| Plantation of Horticulture Crops           | 1                  |                    | 1                       |
| Sprinkler Irrigation                       | 3                  |                    | 4                       |
| <b>DBT- Subsidy Released</b>               | <b>135</b>         |                    | <b>143</b>              |
| Drip Irrigation                            | 45                 |                    | 46                      |
| Farm Mechanization                         | 3                  |                    | 3                       |
| FFS Host Farmer Assistance                 | 6                  |                    | 8                       |
| Pipes (HDPE/PVC)                           | 12                 |                    | 12                      |
| Plantation of Agroforestry                 | 1                  |                    | 1                       |
| Plantation of Horticulture Crops           | 10                 |                    | 10                      |
| Polyhouse (Open Vent)                      | 1                  |                    | 1                       |
| Production of Foundation & Certified Seeds | 8                  |                    | 8                       |
| Small Ruminants                            | 3                  |                    | 7                       |
| Sprinkler Irrigation                       | 43                 |                    | 44                      |
| Water Pumps                                | 3                  |                    | 3                       |

During CM-V 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 are presented in Table No. 13. The details of all the FPC's visited is presented in Annexure III and IV.

Table 13: Asset Verification of FPC/SHG Activities

| Activities                                 | Physically Present |    |                    | Total Asset Verified |
|--------------------------------------------|--------------------|----|--------------------|----------------------|
|                                            | Yes                | No | Under Construction |                      |
| <b>FPO</b>                                 | <b>21</b>          |    |                    | <b>21</b>            |
| Custom Hiring Centre                       | 13                 |    |                    | 13                   |
| Godown                                     | 1                  |    |                    | 1                    |
| Grain Processing (Cleaning & Grading Unit) | 3                  |    |                    | 3                    |
| Oil Extraction Unit                        | 2                  |    |                    | 2                    |
| Other Agribusiness Activity                | 1                  |    |                    | 1                    |
| Seed Processing Unit                       | 1                  |    |                    | 1                    |
| <b>SHG</b>                                 | <b>16</b>          |    |                    | <b>16</b>            |
| Custom Hiring Centre                       | 16                 |    |                    | 16                   |

### Status of Community based Soil & Water Conservation Activities

Activities under this included Graded Bunding, Continuous Contour trenches, cement *Nala* bund, etc. As part of CM-V, NRM activities that have been completed are covered accordingly. Total 50 beneficiaries have been covered in project villages and 25 beneficiaries in control villages as part of CM-V. Compartment or Graded Bunding activities were taken up in 40 sample Project locations, it was 3 in Control villages, while construction of Cement *Nala* Bunding was taken up in 10 Project locations, none in Control. Both these works were completed by year 2021-22

It was questioned whether the planning for development of community assets was done according to the water balance, 44 percent respondents from Project and Control said that planning was done.

As per questionnaire, it was asked to rate the construction quality of the community watershed structure, 56 percent from the Project and 36 percent from the Control villages said it was very unsatisfactory. Only 8 percent beneficiary were somewhat satisfied with the work from Project Villages



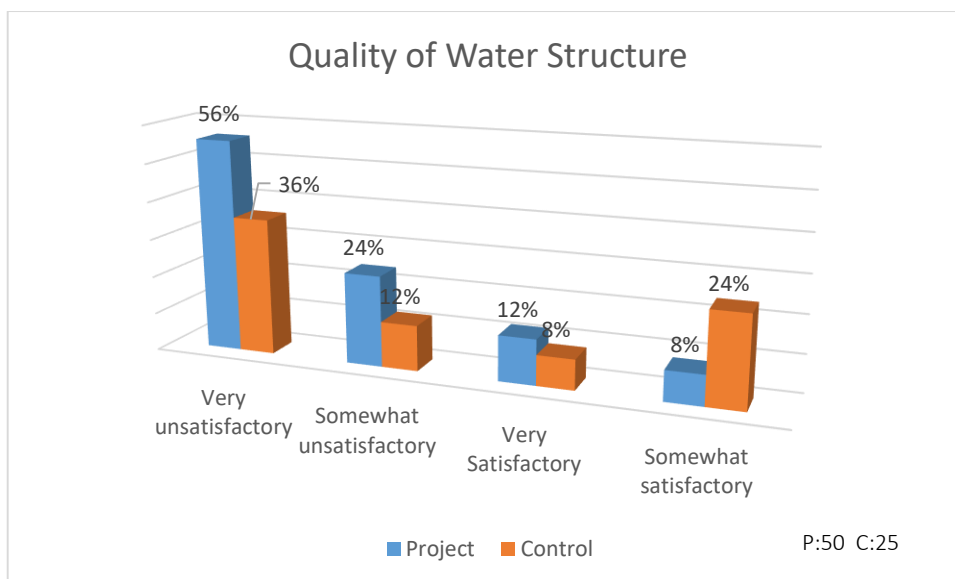


Figure 86: Quality of Water Structure

It was asked whether they find the work useful, 68 percent respondents from Project and 52 percent from Control villages replied it was very useful.

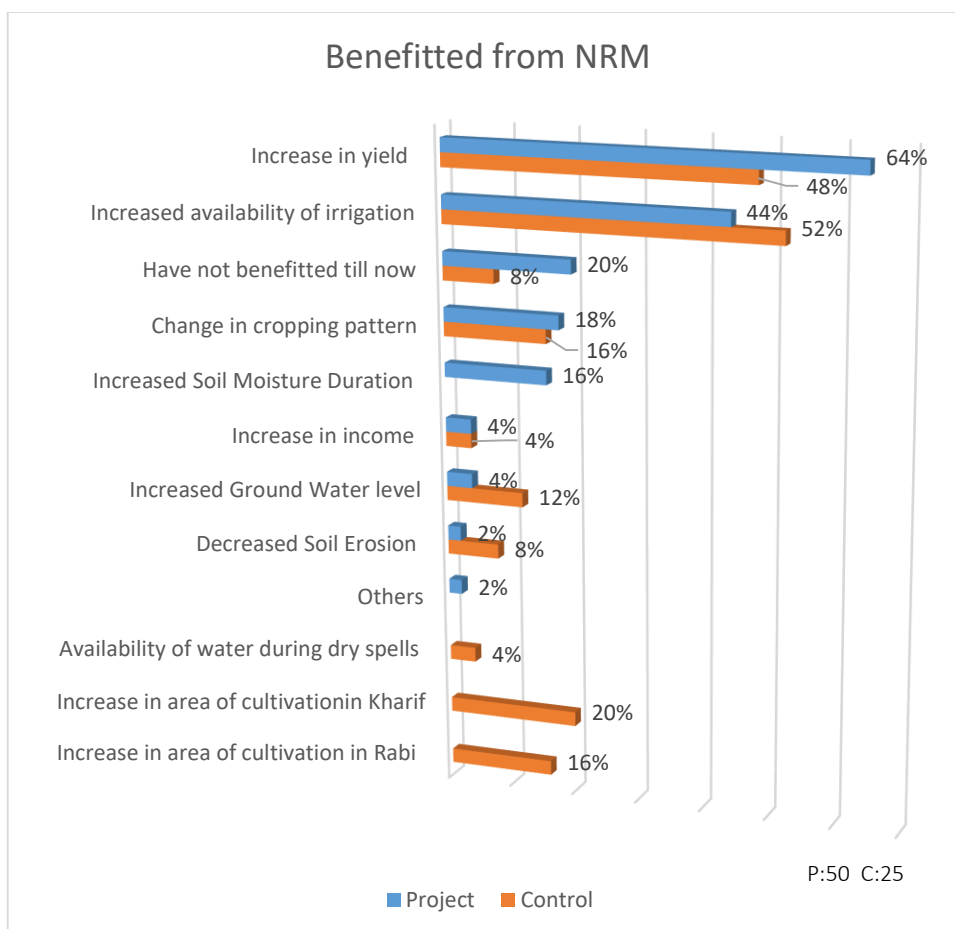


Figure 87: Benefitted from NRM

With regard to question on being benefitted from the NRM work, 64 percent from Project and 48 respondents from Control villages stated that it increased the yield, while 44 percent from Project Villages and 52 percent from Control stated that it increased the availability of irrigation water. Interestingly 20 percent from Project said that they are not benefitted yet, while the percentage for this response in Control villages was 8. About 18 percent from Project villages and 16 percent from Control had the opinion that it brings changes in cropping pattern. Only 4 percent respondents from both Project and Control villages said that it increases income.

Regarding opinion on increase in ground water level due to this activity, 66 percent from Project and 4 percent from Control villages replied no such thing had happened but with a hope that it may increase in near future.

Regarding opinion on increase in ground water level due to this activity, 66 percent from Project and 4 percent from Control villages replied no such thing had happened but with a hope that it may increase in near future.



Figure 88: NRM Activities

## **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-V 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 Interviewed**

As part of the CM-V survey, 21 FPCs under project area and 11 FPCs outside the project (control) were interviewed. We interviewed 3 persons per FPC including the Director, analysed the responses and presented below:

- Out of total 21 FPCs, 07 FPCs have registered during the year 2021 and remaining FPCs were registered earlier.
- Of the 21 FPCs covered, 13 FPCs operate Custom Hiring Centres (CHC), Four have Seed processing, Cleaning and grading units, Two have Oil extraction units, one each have Godown and Agri-Input business.
- All these FPCs have received knowledge & technical support through MACP, ATMA and PoCRA.

#### **Training Received**

As part of interview, members were asked whether they had received any training for FPC Management? About 38 percent members from Project and 39 percent from Control said that they have received training. Though training should cover all the farmers, more focus may be accorded to project area.

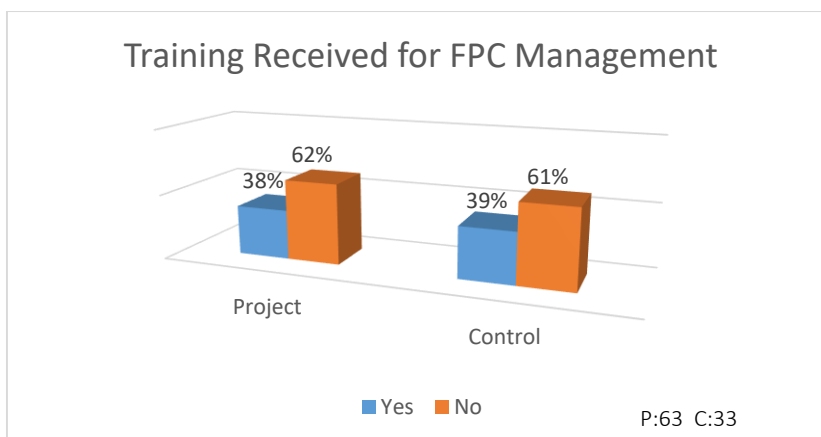


Figure 89: Training Received for FPC

When asked about the source of training 63 percent from Project area and 38 percent from Control said that they have received training from ATMA, remaining opted for others like MACP.

### Current Activities by FPC

It response to the question on what are the activities the FPC was currently involved? In response 43 percent from Project and 48 percent from Control villages said aggregation of produce. Further 27 percent members from Project villages are undertaking value addition to agriculture produce by sorting and grading.

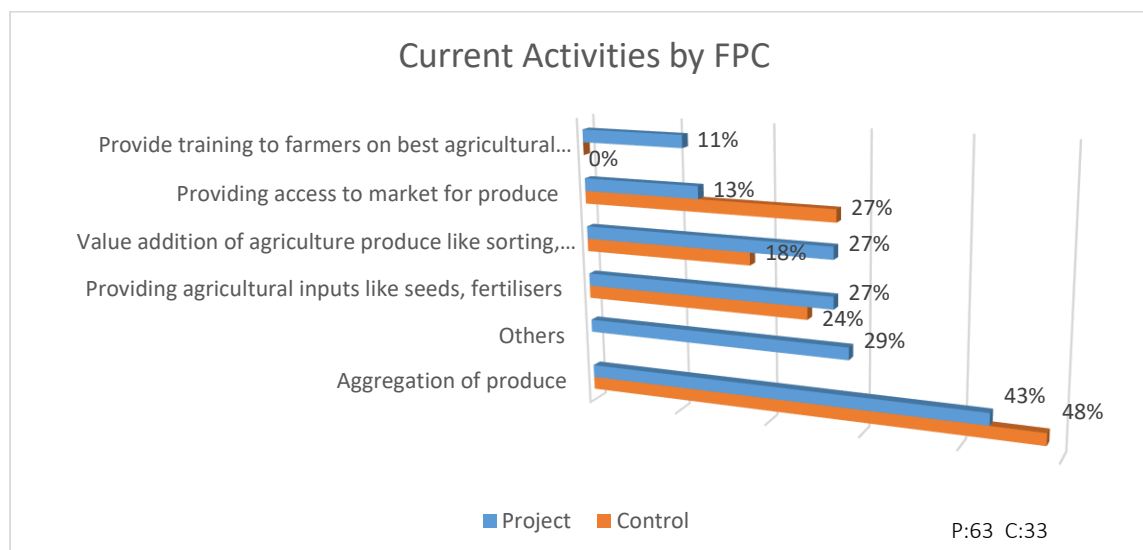


Figure 90: Current Activities by FPC

Thirteen percent from Project areas said they are providing access to market for the produce, while the figure was 27 percent in case of Control. About 27 percent respondents from Project areas also said that they are providing agricultural inputs like seeds and fertilizers to the



farmers, while only 24 percent from Control areas. About 11 percent FPCs from Project villages also provide training to the farmers on best agricultural practices.

When asked how regularly do they participate in general body meetings of your FPC/FPO, almost about 80 percent and above from both Project and Control areas said that they do it always. There is scope to promote FPCs even in non-project areas.

### Participation in Decision Making

On being asked whether they participate in decision making process of their FPO/FPC, 74 percent from Project and 60 percent from Control villages said that they were always involved in decision making, only 10 percent members from Project said it was rarely.

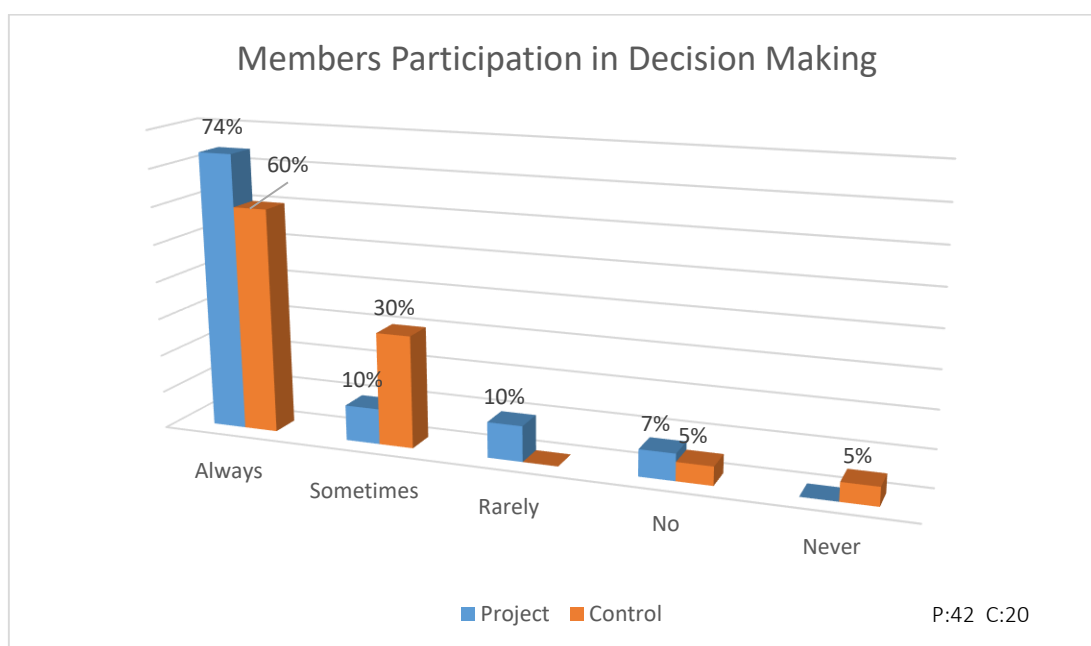


Figure 91: Members Participation in Decision Making

### Facilities and Services provided by FPC

On being asked what kind of facilities or services members provide or receive from the FPC, 38 percent from Project villages benefitted by access to equipment and tools for agricultural purposes. About 33 percent from Project and 24 percent from Control villages received marketing support in selling agricultural produce. Thirty percent from Project were supported for purchasing seeds through their FPC, while the 24 percent in case of Control villages. Twenty one percent from Control and 19 percent from Project said they provide grading and sorting of agricultural produce (P:63, C: 33)

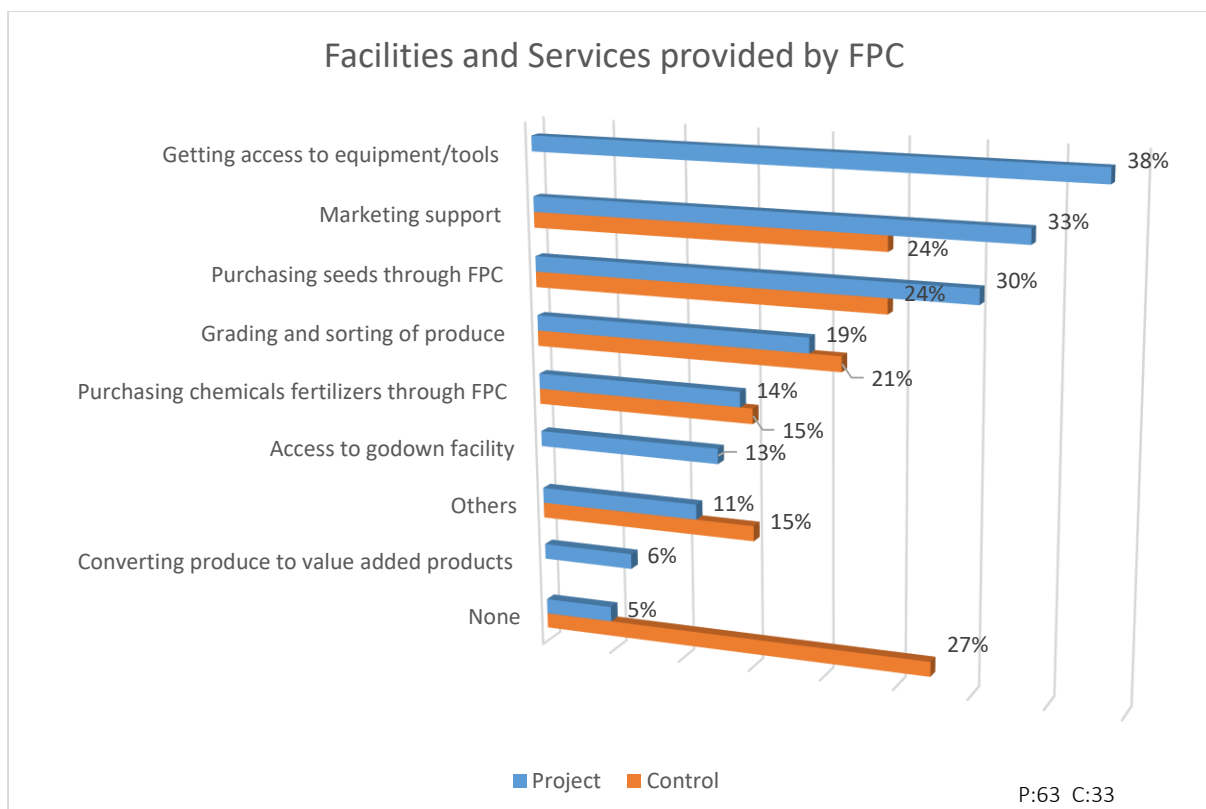


Figure 92: Facilities & Services Provided by FPC

It may be observed that the FPCs in the project areas have been offering assorted services right from input supply to marketing support after value addition. In control areas, about 27% of the members do not receive any services, indicates many members or FPCs are inactive or just exist in documents.

When asked if their FPC had received any grant from POCRA for any business activities, 90 percent confirmed, while 10 percent denied from the Project villages. It may be concluded that almost all the participants have been supported with grant from PoCRA.

### Findings from KIIs with FPC Board Director

The CM-V Survey has covered 21 Farmer Producer Companies (FPCs), Seven of these FPCs were registered in 2021, while the others were registered before that. All of these FPCs have received knowledge and technical support through various projects such as MACP, ATMA, and PoCRA. Of which, 13 operated Custom Hiring Centers (CHC), four have Seed Processing, Cleaning, and Grading units, two have Oil Extraction units, and one each have a Godown and an Agri Input business.

### Participation and Decision Making

Based on the interview, it may be stated that Directors of the organization hold monthly meetings to discuss various issues related to planning and implementation of activities. These

meetings are well attended, with an average of 70 to 75 percent attendance from the Directors and Presidents. During these meetings, most members have been given the opportunity to speak and share their ideas. The Directors also encouraged women farmers to become shareholders of the FPCs. Additionally, the FPCs have importance to increase the participation of women from vulnerable and tribal communities by sharing information about the various activities implemented by the organization.

### **Book-keeping and Records**

The organization maintains several types of records, including an Inward-Outward register, Cashbook register, Activity expenses register, and Meeting register. These records are kept by the President, Director, or an appointed person, and are subject to an annual audit by a Chartered Accountant (CA). This highlights the transparency in operation and democracy in participation.

### **Financial Discipline**

The Directors of the FPCs regularly check the account balance and are familiar with the process. The Secretaries or other members are also capable of carrying out bank-related tasks independently. It shows that the FPCs are bankable.

### **Training/ Capacity Building attended by Members**

Out of the 21 FPCs, 13 have participated in a training program related to their activities, while eight have not attended any training. The training programs covered various topics such as financial management, seed processing, market linkages, and making of business proposals. These trainings were organized at various locations including KVK, PD-ATMA premises, and Agriculture University.

### **Impact due to training**

The training program helped the members to develop skills such as business management, financial management, and market linkages. It also led to an improvement in the handling of Custom Hiring Centers (CHCs). Additionally, it resulted in a plan to develop other supporting activities for financial management. All the trainings have positively impacted the FPCs.

### **Any further training required**

Out of the 21 FPCs, eight FPCs' members have not attended any training. Training programs are necessary for various aspects such as maintaining records, technical knowledge about operating various implements and tractors, audit information, financial management, market linkages, and business development. It is therefore suggested that the remaining FPCs may also be imparted training.



### Key activities (pre and post-harvest)

Out of the total of 21 FPCs, four FPCs have engaged in cleaning and grading seeds, while a few FPCs had Agri input shops, Dal Mills, and Godowns before receiving support under the PoCRA project.

### Knowledge of Activity under PoCRA

The information regarding the PoCRA project was obtained from officials from the Agriculture Department, ATMA, and FPC peers. Additionally, farmer friends from the project villages also provided information about the project.

### Type of Assistance received under PoCRA

Out of the total 21 FPCs, 13 have received support to set-up Custom Hiring Centers, 3 to set-up Seed or Commodity Processing Units, two for Oil Extraction Units, and one FPC each for Seed Processing Unit, Godown, and an Agri input shop.

### Total cost of the project under NSDKP/PoCRA

The project cost for each activity sanctioned under the PoCRA project varies. FPCs have received approximately 60-80% subsidy for the project cost. Out of the 21 FPCs, six FPCs have obtained loans from banks to fund their activities, while the remaining 15 FPCs have arranged finances through their own or other sources. The details are as follows-

| Company                                                                         | Village    | Bank Loan Details                              | Interest (%) |
|---------------------------------------------------------------------------------|------------|------------------------------------------------|--------------|
| Varhad Grains Agriculture Producer Company Ltd., Agar, Dist. Akola              | Agar       | Rs. 30 Lakh availed from Alahabad Bank, Akola  | 10.50        |
| Bajrangbali Farmers Producer Company Ltd., Warkhed, Dist. Akola                 | Warkhed    | Rs. 10.48 Lakh availed from ADCC Bank, Akola   | 11.0         |
| Krishami Agro Producer Company Ltd., Naya Akola, Dist. Amravati                 | Naya Akola | Rs. 35 Lakh availed from Jijau Bank, Amravati  | 11.0         |
| Jay Sardar Krushi Vikas Farmers Producer Company Ltd., Malkapur, Dist. Buldhana | Malkapur   | Rs. 85 lakh availed from from NABKISAN Finance | 11.0         |
| Krushideep Agricultural Producer Company Ltd., Borgaon, Dist. Washim            | Borgaon    | Rs.75 Lakh availed from from NABKISAN Finance  | 9.80         |
| Mahavidarbha Farmers Producer Company Ltd., Wakad, Dist. Washim                 | Wakad      | Rs. 18.56 Lakh availed from NABKISAN Finance   | 11.0         |

### Activities Status and Time taken

- All the FPCs are operational

- It took around 2-3 months for making to setup.

### **Member Access to Facilities**

- On average, 60-70 members/non-members have access to the CHC activity, 25-30 members/non-members have accessed the cleaning and grading activity, while 20-25 members/non-members have accessed the Godown activity.
- Members of the FPCs have accessed these activities at a lower rate (20-25% less) as compared to non-members.

### **Total CHC created, types and usefulness**

Out of 21 visited FPCs, 13 have established CHCs which provide various farming equipment such as tractors, sowing machines, ploughs, and spraying machines. These tools help in saving time, reducing labour and operational costs.

### **Utilization of Machinery**

The majority of members have utilized the machines and implements provided by the CHCs, which are being used for various field operations such as land preparation, sowing, intercultural operations, harvesting, and transportation of the produce.

### **Use by Non-members and rent**

Non-members are allowed to use CHC implements, but paid a higher amount of rent compared to the members.

### **Plans for purchasing new implements/machines**

Currently, none of the FPCs have planned to purchase new implements, but they may consider it in the future.

### **Status of Godown**

Sardar FPC was the only one that had built a Godown in Malkapur. Its purpose was to provide storage facilities for rent to farmers and provide pledge loans for produce. They mainly store Soybean, Tur, and Gram. The Godown had a total capacity of 180-200 MT, with an average utilization of 100 MT for around 90 days. The loss during storage was estimated to be 1-2%, and about five people are employed per day for three months at an average daily wage of Rs. 250-300 per person. The godown has benefited the farmers to reduce the post harvest losses and also provided gainful employment to a few rural persons.

### **Storing produce/commodities purchased by FPC**

The group purchases produce at 5% more than market price and cleans and grades it before selling through intermediaries or directly at APMC and outlets. The monthly income generated

was around Rs. 30-40 thousand with an operational cost of Rs. 100 per quintal. However, the group faces major issues with market linkages and plans to construct a cold storage in the future.

### **Status of Processing Unit**

Three out of the 21 FPCs have established processing units for soybean, tur, and gram. The total capacity was 150 MT, with an average utilization of 100 MT per year. The percentage of loss during processing was less than 1%. The processing units employ six to seven persons per day, with an average daily wage of Rs. 250-300 per person. Raw materials are sourced from group members and non-members, and products are sold directly or through intermediaries at APMC or local markets. The monthly income generated was about Rs. 35,000 to 40,000, with operational costs of about Rs. 100 per quintal. Market linkages are the major issues faced, but there are no plans for expansion at present.

### **Environmental safeguards followed by FPO**

The FPCs followed environmental safeguards during the implementation and construction of their activities. However, they did not construct toilets, hand washing facilities, or solid and liquid waste management and pollution management systems. Most of the FPCs are located in safe locations from an environmental standpoint.

### **Fire safety standards**

Ten out of 21 FPCs have fire safety measures in place, and the FPC members are aware of water management strategies.

### **How had the project benefitted**

The CHC activity had benefited most of the FPCs by enabling timely field operations and reducing labor and operation costs. The CHC was easily accessible to villagers, allowing for efficient use of time.

### **Issues and challenges faced**

The FPCs are facing issues with bank and market linkages, as well as a lack of technical knowledge. Banks credit is not readily available, and many FPCs are not aware about market linkages. However, the CHC activity had been beneficial for most FPCs, as it allows for timely field operations and reduces labor and operation costs.

### **Feedback of the FPO portal**

Most of the directors in FPCs are not aware of the FPO portal, so there was a need for creating awareness about it among the FPC members.

### Feedback on the support by the project staff

- The project should include layer poultry farm activity as a support activity.
- Capacity building, market linkages, and business development training should be provided every six months.
- More support was needed for marketing of the produce. The project guidelines should be minimum and supportive to the FPCs.

### FPC Audit Report Status in CM-V Survey

Total 21 FPCs were visited during CM-V Survey. Out of that, 13 FPCs have received benefit for CHC, 03 for Grain Processing units, 02 for Oil Extraction units and 03 FPCs each for Godown construction, Agri. Inputs unit and Solar Panel unit.

Out of total 21 FPCs supported by the project, audited reports from 10 FPCs showed that they have started earning the profits, while 05 FPCs had suffered loss and 05 FPCs had recorded no profit/loss in FY 2021-22. The profit earning by 10 of 21 FPC's can be particularly attributed to the efforts made by the project for training and capacity building of FPCs and support through various activities including Godown, CHCs, Processing Units, Seed Supply etc. Project has formed partnership with National Institute of Post-harvest Management, Krishi Vigyan Kendra, Baramati and VAMNICOM, Pune for extension support.

During our survey it was found that a FPC named Nishad Agro Producer Company Ltd. Vyala, Tehsil-Balapur and Dist. Akola, had established the CHC at other location instead of Vyala. It was observed that, there was no unit at Vyala village and district administration was not aware of it. FPC directors had also not cooperated with our team members. During our continuous follow up it was found that the CHC unit was established at Borgaon Manju, Tehsil & Dist. Akola. It was also found that the unit was established for individual purpose only; none of the other members or villagers were using it. Another FPC, Shemba Kanti Agro. Producer Company, Shemba, Tehsil-Nandura, Dist. Buldhana did not provided the audited statements as no audits had happened until the last visit.

One of the FPC viz., Shemba Kanti Agro. Producer Company, Shemba, Tehsil-Nandura, Dist. Buldhana was closed.

### Findings from SHGs Supported by PoCRA

Apart from FPCs, the project also focuses on SHGs, which are an integral part of the institutions to be supported under the project. A comparison of SHGs in project and control villages is given in this section. Total 16 SHGs in Project and 8 SHGs from Control villages have been surveyed. The details of Project Cost and Subsidy Disbursed to SHGs Covered in CM-V is shown below in the table.

Table 14.: Project Cost and Subsidy Disbursed to SHGs Covered in CM-V

| S.No. | Name of SHG                                | Village       | Tehsil          | District | Benefitted by the Activity            | Project Cost (Rs.)   | Subsidy Disbursed Amount (Rs.) |
|-------|--------------------------------------------|---------------|-----------------|----------|---------------------------------------|----------------------|--------------------------------|
| 1     | Ramgiri Mahila SHG                         | Dahigaon      | Chandur Railway | Amravati | Establishment of Custom Hiring Centre | 11,84,700/-          | 6,59,724/-                     |
| 2     | Shivneri Mahila SHG                        | Ratnapur      | Anjangaon       | Amravati | Establishment of Custom Hiring Centre | 11,86,750/-          | 6,70,126/-                     |
| 3     | Shri Gajanan Shetkari SHG                  | Agikhed       | Patur           | Akola    | Establishment of Custom Hiring Centre | 16,90,800/-          | 9,16,302/-                     |
| 4     | Kastakar Shetkari SHG                      | Dongargaon    | Balapur         | Akola    | Establishment of Custom Hiring Centre | 15,63,220/-          | 9,37,932/-                     |
| 5     | Jay Gajanan Shetkari Utpadak SHG           | Hasnapur      | Balapur         | Akola    | Establishment of Custom Hiring Centre | 19,75,000/-          | 10,61,016/-                    |
| 6     | Shri Siddheshwar Shetkari Utpadak SHG      | Kanheri Sarap | Barshitakali    | Akola    | Establishment of Custom Hiring Centre | 16,89,000/-          | 10,13,400/-                    |
| 7     | Jay Bhavani Shetkari Utpadak SHG           | Khadki Takali | Akola           | Akola    | Establishment of Custom Hiring Centre | 19,99,000/-          | 11,99,400/-                    |
| 8     | Mahalakshmi Shetkari Shetmal Utpadak SHG   | Khirpuri Bk.  | Balapur         | Akola    | Establishment of Custom Hiring Centre | 11,96,000/-          | 11,97,600/-                    |
| 9     | Kastakar Shetkari Utpadak SHG              | Nimbhora      | Akola           | Akola    | Establishment of Custom Hiring Centre | 10,64,500/-          | 6,38,700/-                     |
| 10    | Shivraj Krushi Vidnyan Mandal SHG          | Bhondandigar  | Parola          | Jalgaon  | Establishment of Custom Hiring Centre | 14,49,950/-          | 8,32,485/-                     |
| 11    | Jay Bholenath Shetkari SHG                 | Vitner        | Jalgaon         | Jalgaon  | Establishment of Custom Hiring Centre | 11,46,508/-          | 6,38,400/-                     |
| 12    | Jay Hanuman Shetkari SHG                   | Asola         | Washim          | Washim   | Establishment of Custom Hiring Centre | 14,99,000/-          | 8,86,500/-                     |
| 13    | Gopinath Mundhe Shetkari SHG               | Kurha         | Risod           | Washim   | Establishment of Custom Hiring Centre | 19,60,300/-          | 11,33,400/-                    |
| 14    | Bhagwanbaba Shetkari Sheti Swavalamban SHG | Sohal         | Karanja (Lad)   | Washim   | Establishment of Custom Hiring Centre | 19,99,500/-          | 11,46,330/-                    |
| 15    | Yamuna Mahila SHG                          | Junona        | Seloo           | Wardha   | Establishment of Custom Hiring Centre | 14,71,800/-          | 7,86,060/-                     |
| 16    | Krushi Samruddhi Shetkari SHG              | Marsul        | Umarkhed        | Yavatmal | Establishment of Custom Hiring Centre | 12,83,578/-          | 6,87,930/-                     |
|       | <b>Total</b>                               |               |                 |          |                                       | <b>2,51,59,606/-</b> | <b>1,44,05,305/-</b>           |

## Types of Farmer Groups and SHGs

According to the CM-V Survey, it was observed that out of all the Farmer Groups surveyed in project villages, 69% Farmer Groups had both male and female members, 13% had only male

members, and 19% were solely operated by female members (SHGs). Interestingly, in the control villages, all the SHGs were operated by only female members (P: 32, C:16).

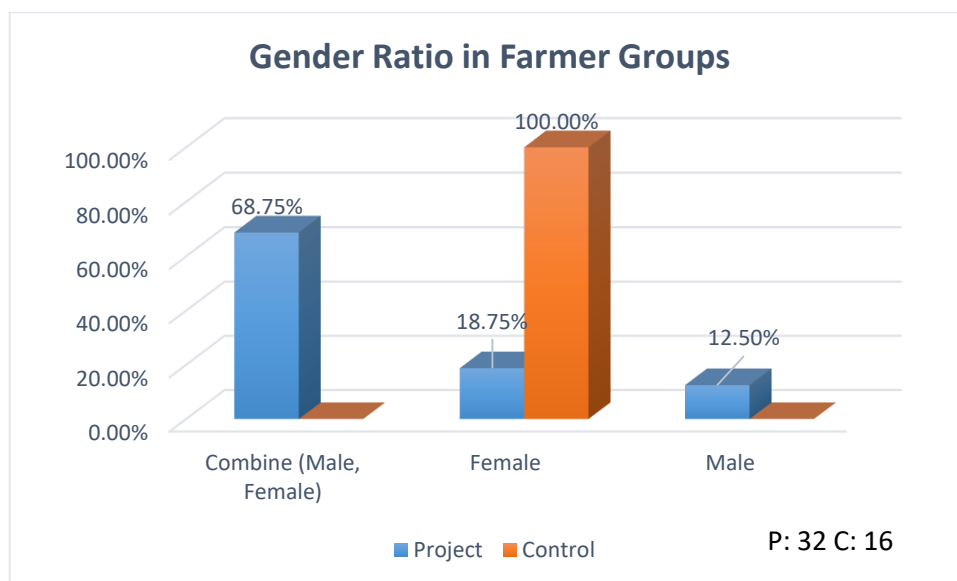


Figure 93: Gender Ratio in Farmer Groups

## Training

The questionnaire asked whether respondents had received training for business establishment, with a mixed response. Among those from Project areas, 56% said they had not received training, while 56% of those from Control areas said they had received training.

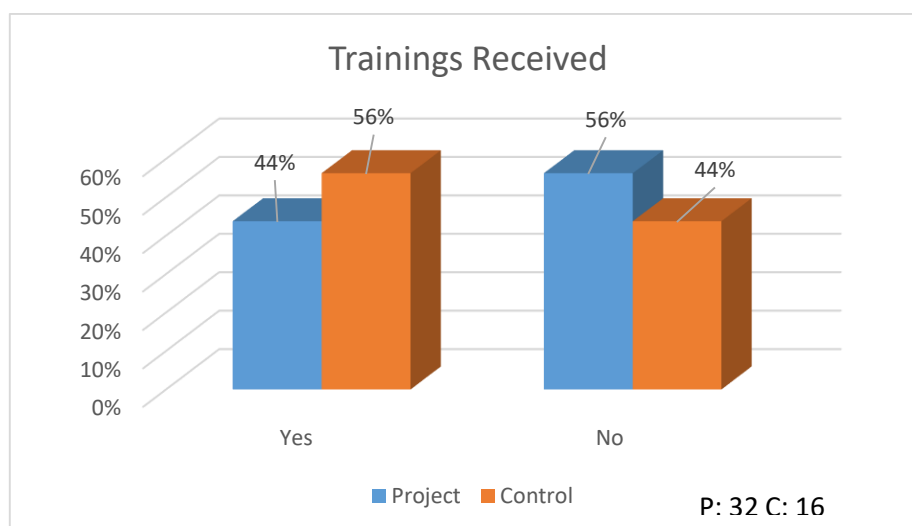
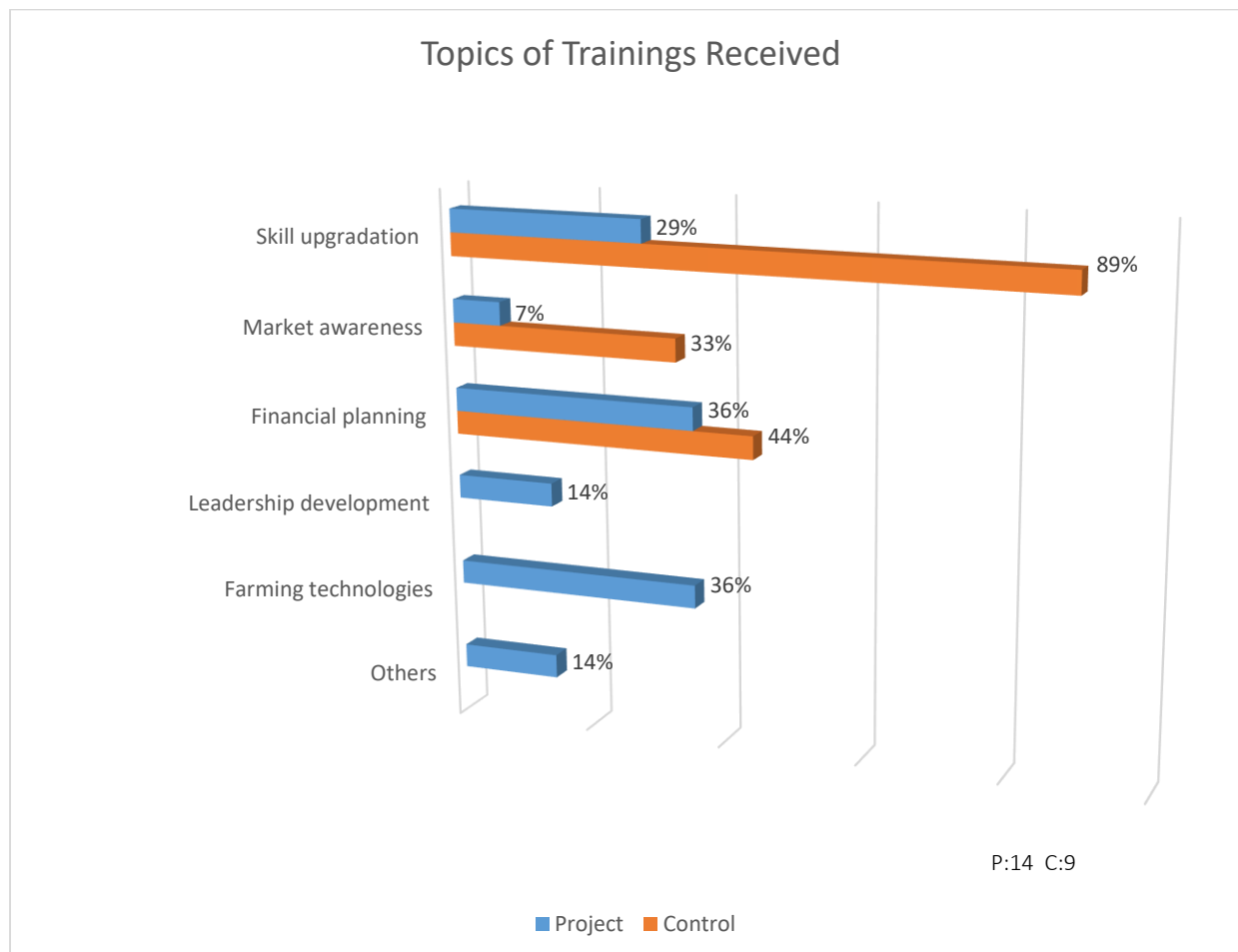


Figure 94: Training Received

## Topics of Trainings Received

When asked about topics of trainings received, from Project villages, 36 percent on financial planning and also in Farming Technologies, 29 percent said Skill upgradation, 14 percent on

Leadership development, 7 percent on Market awareness and 14 percent have received other trainings. While SHGs operating in Control Villages had received only 3 trainings, viz., Skill upgradation 89 percent, 44 percent have received training on financial planning and Market awareness 33 percent.



*Figure 95: Topics of Trainings Received*

From the responses gathered, it was found that a majority of the SHGs in Project villages received trainings on financial planning and farming technologies, skill upgradation and leadership development. On the other hand, the SHGs in Control villages received only a few trainings, mostly on skill upgradation and financial planning, with a smaller proportion receiving training on market awareness. These findings suggest that the Project had been successful in providing a more diverse range of trainings to SHGs, which may help them to improve their businesses and overall economic status. However, there may be a need to further emphasize the importance of market awareness and provide more training in this area to both Project and Control SHGs.

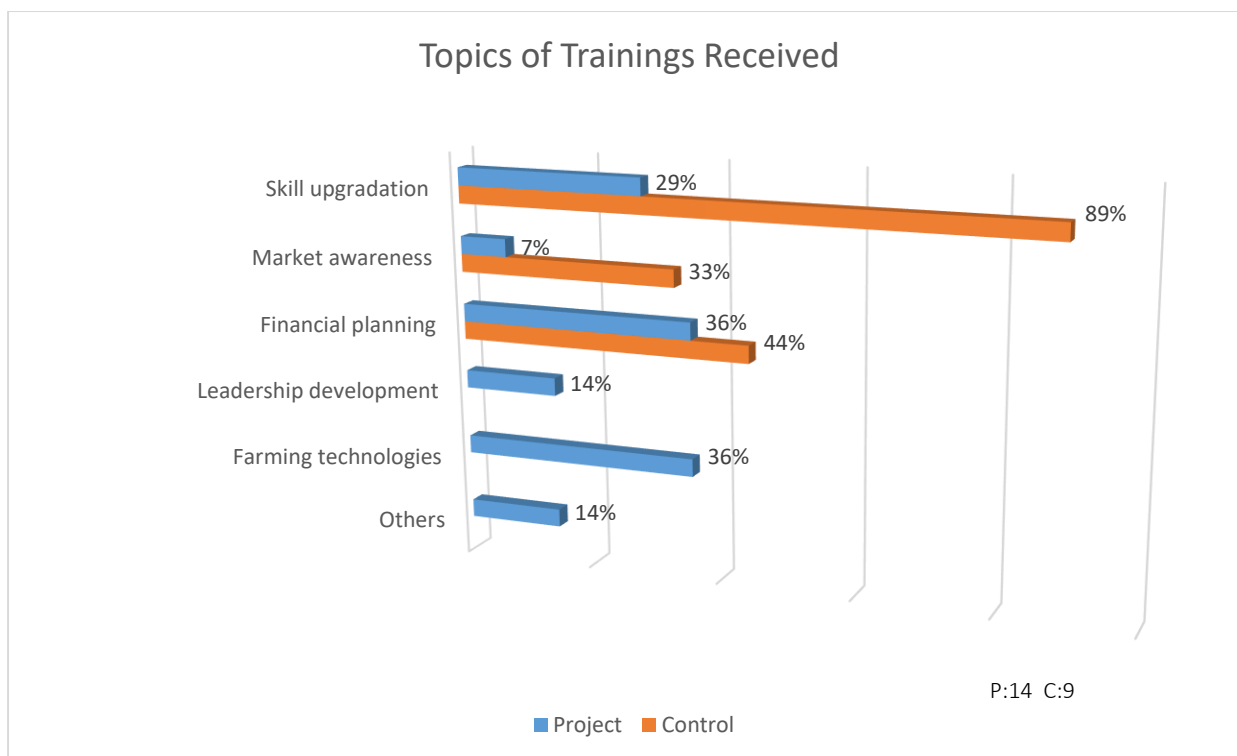


Figure 96: Topics of Trainings Received

The source related to trainings received was also asked from the members of SHGs, 36 percent from Project villages said Krishi Vigyan Kendra, 29 percent from Project Officials, 21 percent from Agriculture Department and 14 percent said they have received training from MSRLM. While, 44 percent respondent members from Control Villages said they received training from Krishi Vigyan Kendra, 11 percent from Agriculture Department and 14 percent from MSRLM.

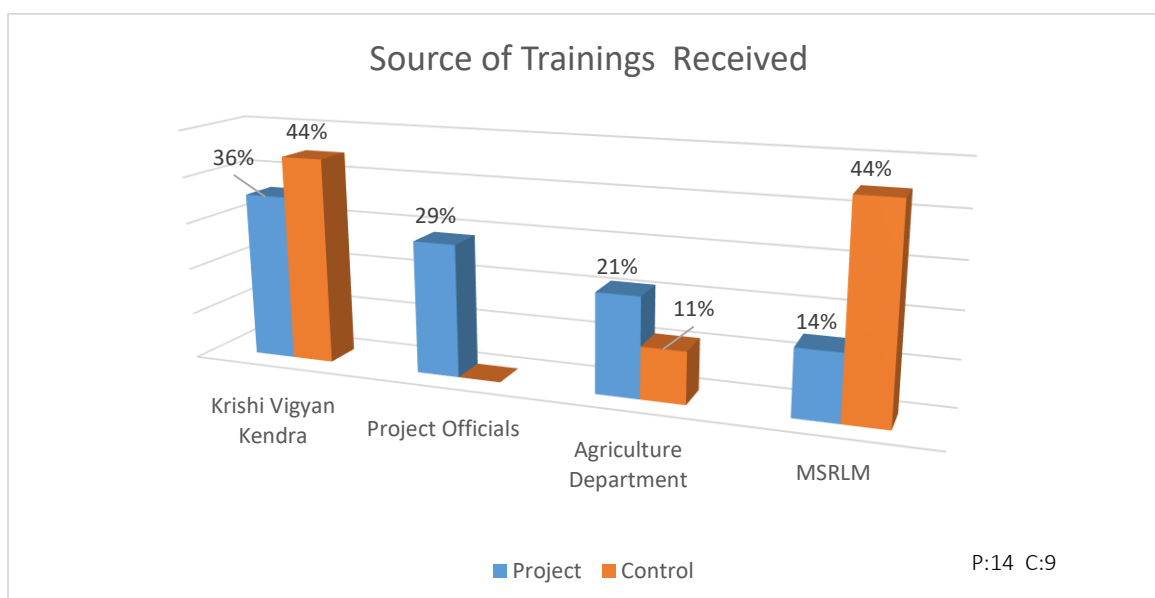


Figure 97: Source of Trainings Received



### Income Generation by SHGs

We also asked if their SHG was currently involved in any income generating activity, 66 percent from Project and 44 percent from Control said they have started generating income from the activities.

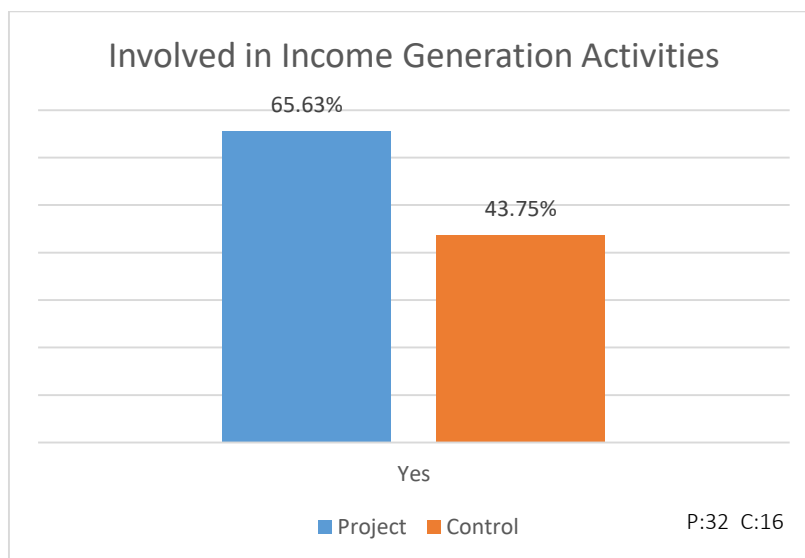


Figure 98: Involved in Income Generation Activities

### Savings by SHGs

We surveyed the SHG members and asked if they had done any savings as a part of their financial training. 37% of the members from the Project villages said they do monthly savings, while 69% from Control villages affirmed the same. On the other hand, we found that 50% of the members from Project villages said that they are not saving currently.

From this data, we can conclude that while a significant number of SHG members from both Project and Control villages are doing monthly savings, there was still a considerable percentage of members from the Project villages who are not currently saving. This suggests a need for further financial training and awareness among the SHG members in the Project villages.

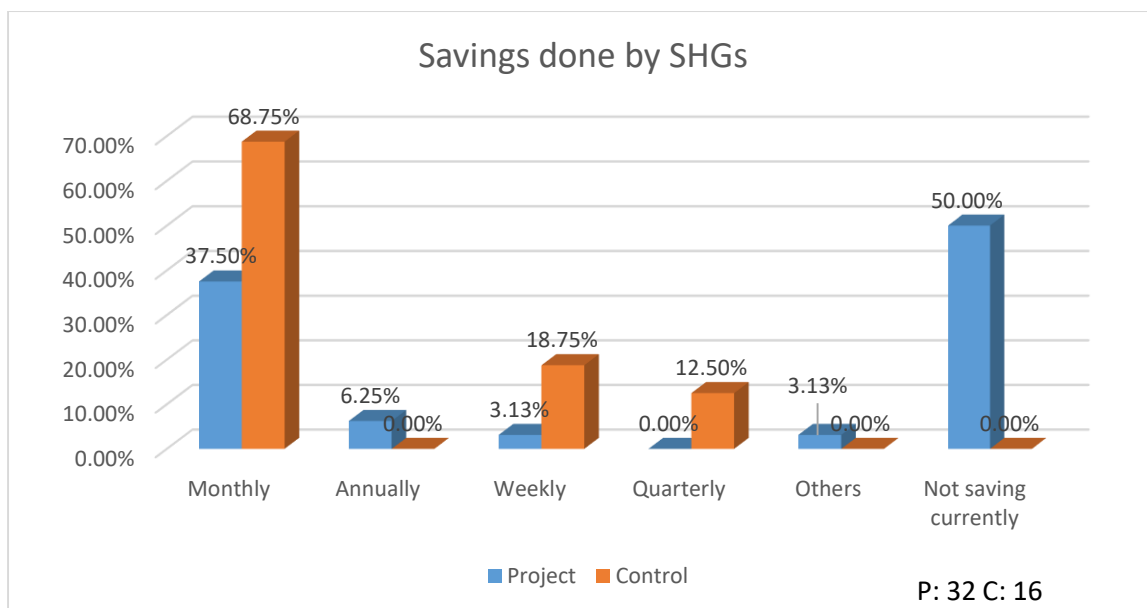


Figure 99: Savings Done by SHGs

### Facilities delivered by SHGs

In response to the question, regarding the facilities or services provided by the SHGs, it was found that 84 percent of the SHGs from Project villages provide access to equipment and tools for agricultural use, whereas only 6 percent of the SHGs from Control villages engage in this activity. In addition, 9 percent of the SHGs from Project villages are involved in market support for selling agricultural produce, whereas none was reported from Control villages. About 9 percent of the SHGs from Project villages and 13 percent from Control villages sell seeds through their SHGs. However, only 3 percent of the SHGs from Project villages engage in value addition of agricultural produce and none from Control villages reported doing so.

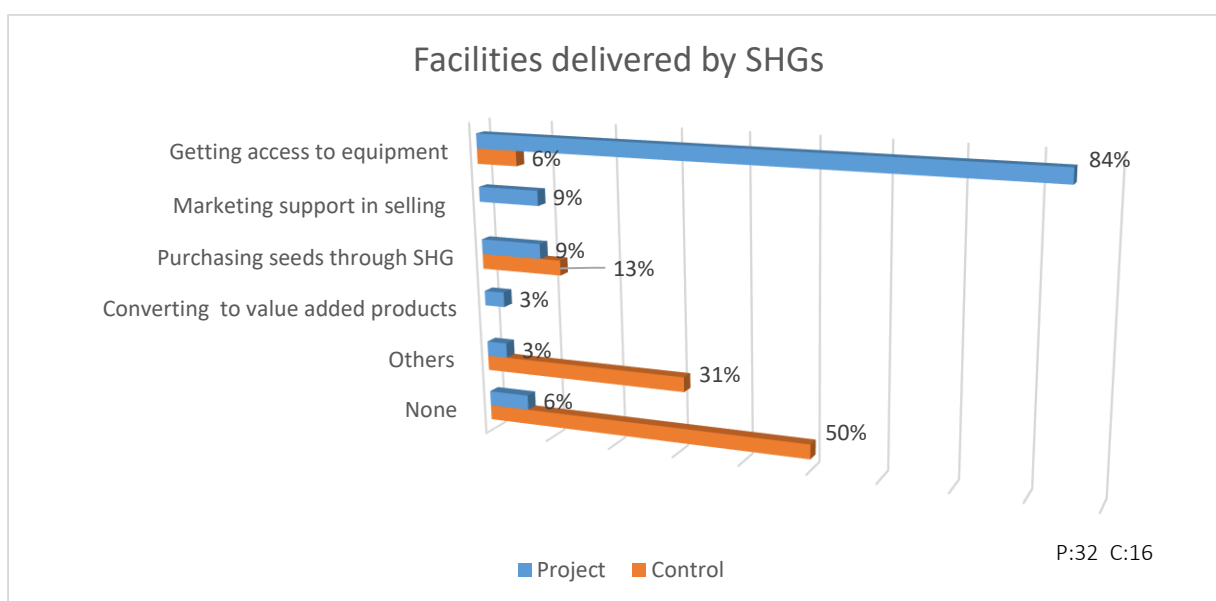


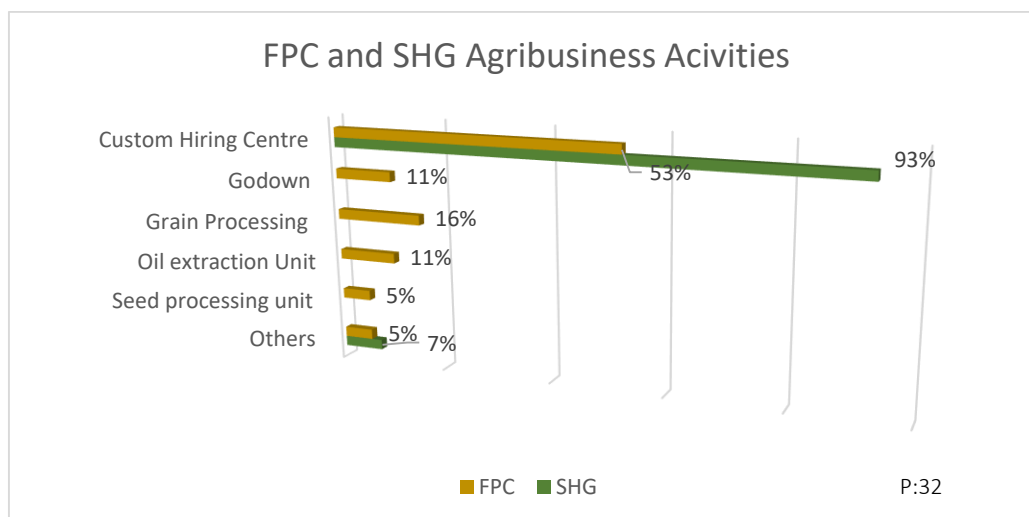
Figure 100: Facilities delivered by SHGs

## Financial Support and Grants

During the CM-V survey, questions were asked regarding the financial support provided to self-help groups. A majority of the respondents (97%) from Project villages were aware of the financial support provided by PoCRA. When asked if they had received the grant, 94% of the respondents confirmed that they had received it.

### PoCRA Supported FPC and SHGs

The beneficiary respondents, who are Directors/Presidents of FPCs and SHGs, were asked whether their organizations received any grant from PoCRA for business activities. Those who replied positively were further asked about the years of benefit and the type of agribusiness project/activity initiated with PoCRA support. The analysis of data revealed that 53% of FPCs and 93% of SHGs started Custom Hiring Centres with the grant received. In addition to this, FPCs engaged in other activities like 11% established Godowns and Oil Extraction Units, 16% started Grain Processing Units, and 5% established Seed Processing Units.



*Figure 101: FPC and SHG Agribusiness Activities*

While being questioned about facing any difficulty in taking the benefit of these activities, 91 percent replied no they did not face any difficulty. When asked what are the major difficulty they face while availing this benefits, all the respondents said it was difficult to get loan from the banks.

Below Table No.15 shows the average project value and how much grants was received for agri-business activities.

Table 15: Average Project Value in Lakhs

| Activities                            | Avg. Project Value (Rs in lakhs) | No. of Units |
|---------------------------------------|----------------------------------|--------------|
| Godown                                | 62.50                            | 2            |
| Grain Processing (Cleaning & Grading) | 43.23                            | 3            |
| Custom Hiring Centre                  | 15.77                            | 23           |
| Seed processing unit                  | 14.90                            | 1            |
| Oil extraction Unit                   | 11.00                            | 2            |
| Others                                | 28.00                            | 2            |
| Grand Total                           | 21.52                            | 33           |

When asked whether their FPC or SHG had obtained a loan from a bank, only 24 percent responded affirmatively, while the remaining 76 percent answered negatively.

### Customer Hiring Centre

As per questionnaire it was asked whether the tools in the tool bank available to the group members or shareholders at low rates, 87 percent response was yes it was available to the group members at low rates.

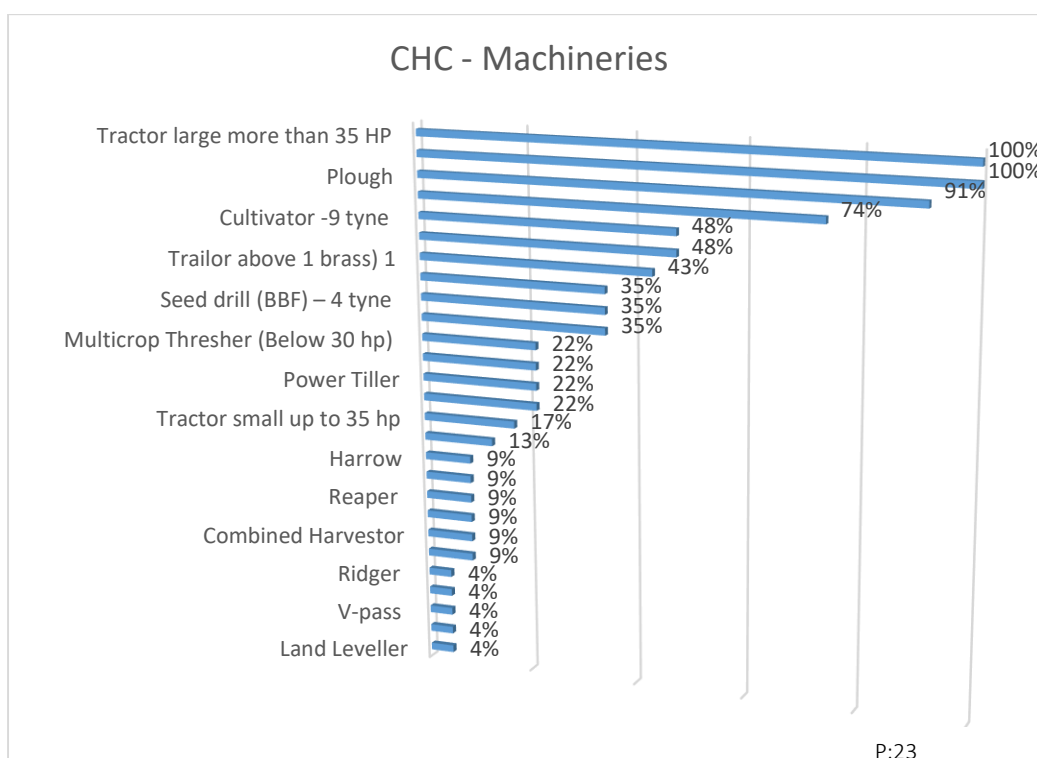


Figure 102: Machineries Available with CHC

When asked at what discounted rates the shareholders hire the tools, the answer varied from 10 to 20 percent discount. More than 48 percent said they offer 10 percent lower rate, 30

percent said it was between 10 to 10 percent rate, whereas 17 percent said the discount was more than 20 percent rate lower.



Figure 103: Response on Discounts Offered

#### Average Area Covered by CHC in a Year

It was asked what was the average area covered by the CHC services in one year, 57 percent said within 50 hectares, 35 percent said 50 to 100 hectares and 9 percent respondents said they cover more than 100 hectares of land in a year.

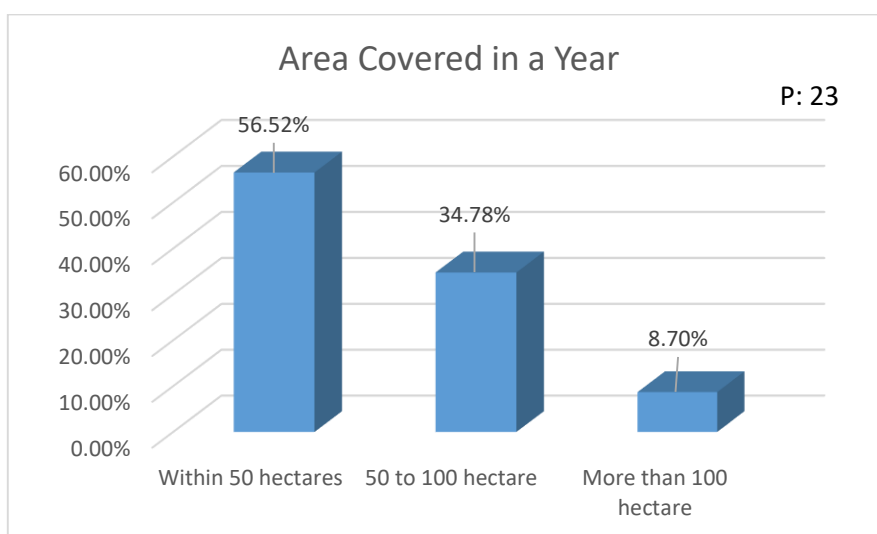


Figure 104: Average Area Covered by CHC in a Year

The respondents were asked regarding the number of farmers in the Project village have been benefitted by the CHC, 87 percent said about 1 to 50, while 8 percent said it was between 51 to 100.

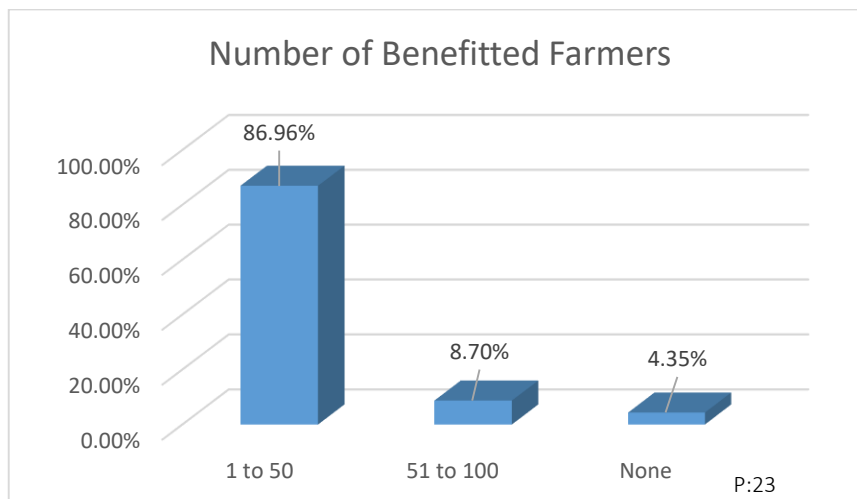


Figure 105: Number of Benefitted Farmers

When asked how many farmers from Non-Project villages benefitted from these CHCs, 61 percent respondents said about 1 to 50 farmers.

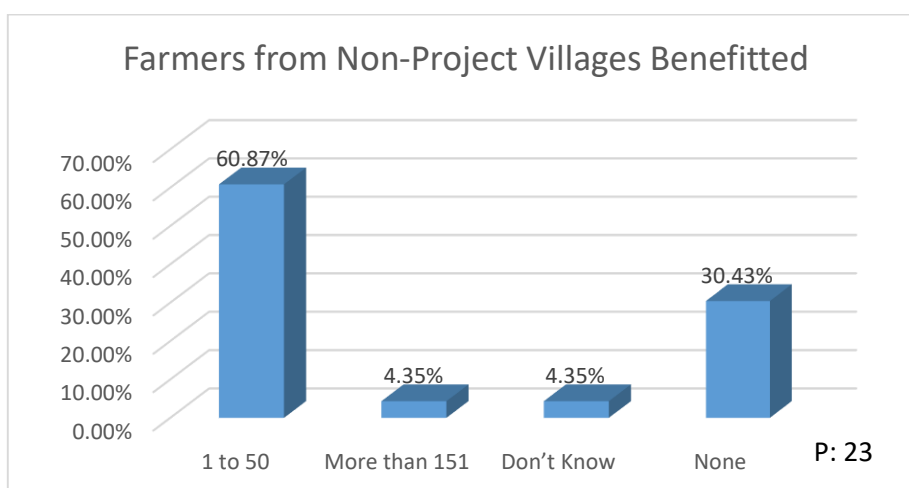
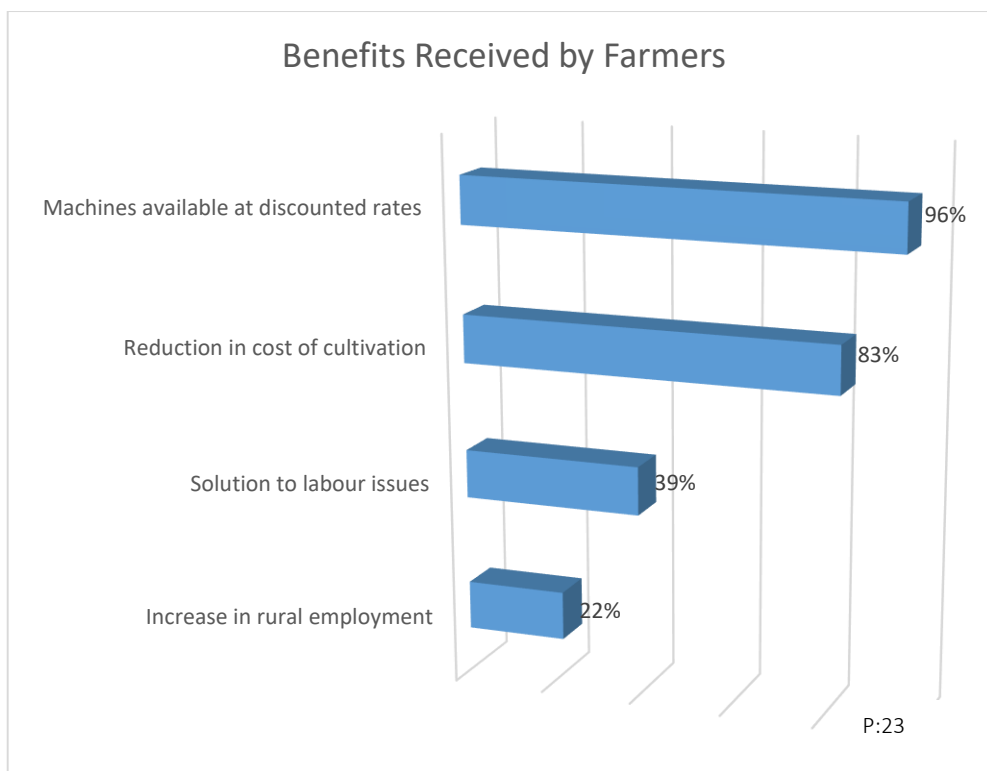


Figure 106: Farmers from Non-Project Villages Benefitted

Another question on benefits received by farmers from CHC was asked, 96 percent respondents said that machines were available on discounted rates, 83 percent said it was reduction in cost of cultivation, 39 percent said it was reduction in labour costs and 22 percent said it increased rural unemployment.



*Figure 107: Benefits Received by Farmers*

It was asked if all the villagers aware of the CHC facility, about 74 percent of respondents said that they are aware of CHC facilities. The response was mixed when asked if all villagers were able to access or utilise the CHC facility, 52 percent said yes, while 48 percent replied no. When members were asked whether the board was displayed regarding project benefit in their villages, 70 percent response was yes. When questioned whether all the equipment's sponsored under the agribusiness component of POCRA project were found in good condition and operational or not, 74 percent response was yes it was operational, while 26 percent said no, it was not.

### **Commodity Processing Unit**

Total six FPC's reported this activity of establishing Commodity Processing Unit. The total capacity was found to be of 650 quintals with average daily use capacity was 342 quintals. It was recorded that average 257 farmers were being benefitted with this activity.

When asked about the benefits of Commodity Processing Unit in their village, 83 percent said it increase rural employment, 67 percent said there was increase in income by selling value added products, 50 percent had the opinion that their produce will get better price, 33 percent said they will get access to market to sell their produce, while 17 percent responded that they don't think it was of any benefit at all.

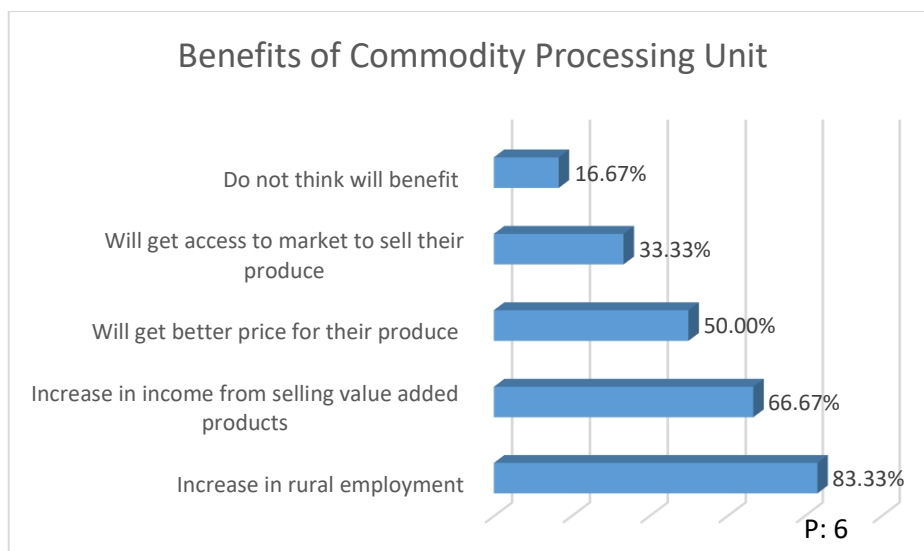


Figure 108: Benefits of Commodity Processing Unit

When asked about the difficulties faced while operating the Commodity Processing Unit, 33 percent said it was unavailability of electricity, rest 17 percent cited issues like lack of supply of raw materials and lack of participation by the members.

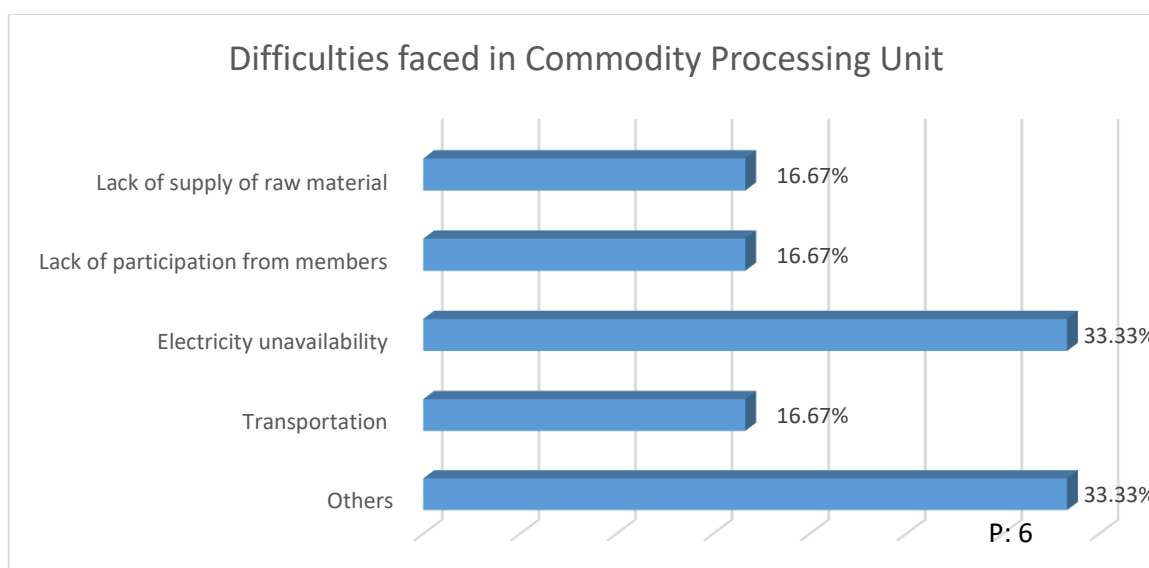


Figure 109: Difficulties faced in Commodity Processing Unit

### Findings from KII with SHGs Members

In the CM-V Survey, a total of 16 self-help groups (SHGs) were covered, and all of them had adopted Custom Hiring Centers (CHC) as a business activity. These SHGs were registered under ATMA, MAVIM, UMED & DRDA. Out of the 16 SHGs, 10 had a mix of male and female members, three had only male members, and three had only female members. Among these SHGs, three were registered in 2018, two in 2019, three in 2020, seven in 2021, and only one was registered in 2022. The Agri. Dept. officials, ATMA, and UMED project officials facilitated these SHGs with knowledge and technical support.



### **Participation and Decision Making**

The President and Secretary of the SHG organized monthly meetings to discuss savings, plan and implement activities. The meetings had an average attendance of 90% wherein all members were free to speak. Project officials, through the President and Secretary of the SHG, aimed to increase the participation of women from motivating the members, vulnerable and tribal communities by sharing information about the project's activities.

### **Book-keeping and Records**

The Secretary or an appointed member was responsible for maintaining registers such as the Work Done Register, Activity Expenses Register, Cash Vouchers, and Meeting Registers. However, none of the SHGs had conducted annual audit so far.

### **Financial Discipline**

All SHG members knew how to check the account balance. The President and Secretary handled bank-related work independently, as they both were signatories. Only women SHG members participate in monthly savings, as observed during the survey. Out of the 16 SHGs, three women's SHGs only were doing monthly savings.

### **Borrowings**

All members of women SHGs had borrowed, mostly for agriculture expenses. However, in SHGs with only men members, no borrowing had taken place due to the absence of monthly savings.

### **Training/ Capacity Building attended by Members**

Out of the 16 SHGs, members from eight SHGs attended a training program related to their activities, while the remaining eight did not attend any training. The trainings were organized at KVK, PD-ATMA premises, and Agriculture University, covering topics such as financial management, CHC operating systems, and business development.

### **Impact due to training**

The trainings had improved the members' skills and knowledge in handling tractors and implements, and they were now planning to develop other agriculture-based supporting activities.

### **Requirement of any training**

Among the 16 SHGs, members of 8 SHGs attended training, while the other eight SHGs did not attend any. Members of SHGs expressed their interest in receiving training on record

maintenance, technical knowledge about operating various implements and tractors, audit information, and business development.

### **Knowledge about PoCRA**

The Agri. Dept. officials, ATMA officials, and SHG colleagues provided information about the PoCRA project and its activities. Farmer friends from project villages also provided information about the PoCRA project. However, it was observed that knowledge level of farmers about PoCRA was very elementary.

### **Type of Assistance received under PoCRA**

All 16 SHGs received assistance for Custom Hiring Centres under the PoCRA project.

### **Total cost of the project under NSDKP/PoCRA**

The cost varied depending on the activity. On an average, the cost of Custom Hiring Center (CHC) was around Rs. 10-12 lakh. Self-Help Groups (SHGs) had received a subsidy of approximately 60%.

### **Source of Fund Arranged**

Out of the total 16 Self-Help Groups (SHGs), the Yamuna SHG located in Junona, Tehsil-Seloo, Dist. Wardha had borrowed Rs. 5 lakh from Central Bank of India, Hamdapur with an interest rate of 5%. The remaining 5 SHGs had arranged their funding through their own means and other resources.

### **Activities Status and Time taken for Setup**

All of the Self-Help Group (SHG) setups were operational. The setup process took approximately 2 to 3 months to complete.

### **Member Access to Facilities**

All members of the group had access to the Custom Hiring Center (CHC) activities, in addition to an average of 60-70% non-members who also have access to it. However, members were charged a lower rate for accessing these facilities as compared to non-members of the CHCs. The discounted rate for members was approximately 20-25% less than that charged to non-members.

### **Total CHC created, types and usefulness**

All 16 of the visited Self-Help Groups (SHGs) had established Custom Hiring Centers (CHCs). The CHCs provide a range of useful machinery, such as tractors, sowing machines, BBFs, ploughs, spraying machines, rotavators, cultivators, reapers, harvesters, and threshers. These

machines were valuable because they save time, reduce labor requirements, and lower the cost of operations.

### **Utilization of Machinery**

The majority of the members had utilized the machinery and implements available at the Custom Hiring Center (CHC). These machines were used in various field operations such as land preparation, sowing, intercultural operations, harvesting, and transportation of farm produce. Additionally, non-members had also utilized the implements from the CHC, but they were required to pay a higher rental fee compared to SHG members.

### **Issues faced in implementing the activity**

There were some issues encountered during the application process, but afterwards, the SHGs did not face any significant challenges.

### **Plans for purchasing new implements/machines**

As of the day of Survey, six SHGs had planned to expand their business by purchasing new equipment such as a Combine Harvester.

### **Status of Godowns (if established)**

Only Jai Bhavani Farmer Producer Group at Khadki Takali, Dist. Akola had constructed a Godown. This group had benefited from both CHC and Godown subsidies provided by the PoCRA project. The main purpose of the Godown construction was to offer rental storage facilities to farmers.

### **Storing produce/commodities purchased by SHG**

During the last visit, there was no produce stored in the Godown, which had a total capacity of about 100 metric tons. The average daily wage per person employed in the Godown would be approximately Rs. 250-300 per day.

### **Environmental safeguards followed by SHG**

During the implementation and construction of the activities, the SHGs followed environmental safeguards. However, it was observed that none of the SHGs had implemented measures such as construction of toilets, hand washing facilities, solid and liquid waste management, and pollution management. On a positive note, the Godown constructed by the SHG was located in a safe location from the environmental perspective

### **Fire safety standards**

None of the SHGs are well-equipped with fire safety measures. However, some members of the SHGs are aware about water management strategies.

### **How had the project benefitted**

Most of the SHGs had benefited from the CHC activity, while one SHG had benefited from the Godown activity. The availability of the CHC activity had allowed farmers to complete their field operations in a timely manner, requiring less time and reducing the cost of labor and overall operations. The fact that the facility was available at the village level made it easily accessible to the farmers.

### **Issues and challenges faced**

- Most of the SHGs had faced major issues related to arranging finances for availing the activities.
- Banks required assets for mortgage, but as the SHGs did not have any assets under their name, the banks had not sanctioned loans to them.
- Moreover, lack of technical knowledge had also posed issues during the operations.

### **Feedback of the FPO/SHG portal**

Some of the SHGs were familiar with the FPO/SHG portal, but it was important to raise awareness among other members of the SHGs.

### **Feedback on the support by the project staff**

The SHGs received adequate guidance and support from the project staff right from the initial stage of the application process. The project staff and department officials were supportive throughout the process.

### **Suggestions for the Project**

The farmers in the Kharpan area should be provided with gypsum as it was not readily available. The subsidy amount should be increased based on the actual expenses incurred during the activity implementation, and it should be disbursed in stages. Business development training should be conducted every six months to enhance the SHGs' entrepreneurial skills. More assistance was required to help farmers market their produce. The project guidelines should be minimal and supportive of SHGs, with additional activities added to the list of benefits. According to SHG members, the project was transparent and beneficial to farmers. The DBT (Direct Benefit Transfer) process was the most effective aspect of the project.

## **Component C: Institutional Development, Knowledge and Policies**

In order to achieve climate resilience and ensure the intended results from the activities proposed, it was essential to build the capacity of stakeholders. The component focuses on mainstreaming climate resilience and the coordinated interaction in the field. As part of CM-V, feedback had been taken from various stakeholders on their awareness, capacity building,

and understanding of environment safeguards, issues and challenges and was presented in this section.

### **Findings from KIIs with Project Specialists (PS) Checklist Summary**

During the CM-V Survey, PS-Agriculture, PS-Agri Business, PS-HR, and PS-Procurement were interviewed from the districts of Amravati, Akola, Buldhana, Jalgaon, Washim, Wardha, and Yavatmal falling in Rest of the Project Area.

### **Opinion about PoCRA project implementation**

- In Akola district, due to implementation of various activities of PoCRA project individual farmers had benefitted, SHGs and FPCs had also benefitted. Work on climate resilient technologies had taken place through the project.
- In Amravati district, activities of the project had been effectively and efficiently implemented. Revision in project guidelines had happened from time to time facilitating implementation of the activities. Apps developed in the project were users friendly and helpful in effective implementation.
- In Buldhana district, implementation of the project was transparent and effective and as per the project guidelines.
- In Jalgaon district, implementation of the project was transparent and effective and as per the project guidelines.
- In Washim district, implementation team members were trying to cover the most of the beneficiaries of the village. Project was transparent and helpful to the farmers.
- In Wardha district, there was demand for activities on hold to be released for benefitting the landless farmers and villagers. All the process of the project was online and transparent, therefore it was working effectively.
- In Yavatmal district, implementation of various activities through the project had helped in improving the livelihoods of the farmers. There was demand for release of activities on hold such as Water Pump, Pipes and construction of Wells. Project was good and its working on climate resilient was the need of hour.

### **Awareness of the environmental safeguards**

Summary of the information gathered from Project Specialists regarding their awareness of environmental safeguards was as indicated below:

- The Project Specialists were aware of the environmental safeguards and ESMF guidelines, and they referred to these guidelines during the preparation of VDP/CDP.
- They had taken care to follow the guidelines during the planning of individual activities, such as FFS, NRM, and FPC asset activities.

- They had planned activities that supported environmental balance, such as avoiding tree cutting, preventing harm to wild animals, implementing NRM activities to reduce soil erosion, planting forest and horticulture species, minimizing the use of chemical fertilizers and insecticide/pesticide/weedicide spraying, properly planning sewage water management, and creating awareness about organic farming.

### **Activities to increase participation of women and marginalized sections**

- In Akola district, a separate plan had been prepared for disabled persons with the assistance of the Guardian Minister. Approximately 56% of SC and 42% of ST category members had registered on the portal, and implementation was underway.
- In Amravati district, separate meetings for women were arranged during the preparation of MLP, and separate FFS were conducted for women with the participation of women members of SHGs. Women's participation had increased through the Krushi Tai initiative.
- In Buldhana district, cluster team members had interacted with marginalized sections of the village and explained the importance of various project activities for their benefit.
- In Jalgaon district, the project team was working in coordination with UMED and the Project Development office in the district. The team was also working to cover beneficiaries through the Pradhan Mantri Micro Food Processing Scheme and other schemes, with a focus on covering most of the women beneficiaries through PoCRA.
- In Washim district, all sections of women were incorporated into MLP on a village-wise basis to ensure that most of the women in the clusters benefit from the project.
- In Wardha district, all sections of women were informed about project activities and guidelines for procuring the activity. Separate Gramsabha meetings were arranged for women on a village-wise basis, and activities were incorporated into MLP.
- In Yavatmal district, discussions were held in VCRMCs on increasing women's participation in the project with the help of Krushi Tai. Separate meetings for SHG women members were conducted to explain the benefits and various project activities. Women-oriented activities from all sections were incorporated into MLP.

### **Challenges in implementing capacity building activities**

- In Akola district, there were no specific challenges in implementing capacity building activities.
- In Amravati district, the team was facing challenges in proper selection of farmers and interacting with subject specialists during exposure visits. Properly arranging exposure visits that were beneficial to farmers was also a challenge.

- In Buldhana district, there were no specific challenges in implementing capacity building activities. The field team had planned the trainings and exposure visits.
- In Jalgaon district, no specific challenges had been observed in implementing capacity building activities.
- In Washim district, there were no challenges in implementing capacity building activities, but funds must be available on time for arranging exposure visits.
- In Wardha district, availability of sufficient amount of funds on time for arranging exposure visits was a challenge. Training should be arranged at the district level to reduce travelling and boarding costs.
- In Yavatmal district, trainings needs were required to be arranged according to the season and at the district level to manage travelling costs. Exposure visits had been planned.

### **Improvements in the training**

- The training component under PoCRA in Akola district was found to be effective and well-incorporated. However, the effectiveness could be further improved if the training sessions were arranged in a timely manner. No major changes were required.
- During the pandemic, most of the trainings were conducted online, but the team members in Amravati district suggested that offline trainings may yield better results. The training component can be improved based on the feedback received from participants.
- The training components under PoCRA project in Buldhana district were deemed satisfactory by the team members. However, proper arrangement of exposure visits related to beneficiaries' activities was needed.
- Jalgaon district team suggested that there was no need to change the training component under PoCRA project as it was already beneficial for the beneficiaries.
- In Washim district, the training component was found to be good, but it was suggested that travelling costs should be paid in advance for arranging the training sessions.
- Wardha district team members suggested that training sessions should be delivered precisely and at suitable locations for the beneficiaries.
- Yavatmal district team suggests that training sessions should be arranged at the Tehsil, Sub-Division and District levels to benefit more participants. Provision for travelling costs should be allowed in the project. A special training session related to climate resilience should be arranged for DPIU members.

### **Key challenges in implementing PoCRA activities**

#### **a) Challenges faced by Project Specialist Agriculture**



- In Akola district, it was observed that about 76% of the project villages fall under the kharpan area, which required activities to cope with saline soil. To benefit the farmers in these areas, more activities related to soil reclamation treatments, such as the use of Gypsum or Fly Ash, adoption of natural resource management activities such as contour bunding, contour sowing, farm ponds, deepening and widening of nala's, Graded Bunding, compartment bunding etc. should be incorporated into the project activity component.
- In Amravati, Wardha, and Yavatmal districts, it was recommended to fill the post of PS-Agri with a full-time and separate person to avail better services.
- In Wardha district, the cluster villages were located far away from the Tehsil and District places, leading to increased traveling costs. In this regard, cluster team members had recommended increasing the remuneration to cover these expenses.
- In Buldhana, Washim, and Jalgaon, it was revealed by the PS-Agri that there were no major issues faced.

#### b) Challenges faced by Project Specialist Agri business

- In Akola district, the PS-Agri Business joined on July 1st, 2022, and no challenges had reportedly been faced.
- As revealed by the PS-AB of Amravati, Jalgaon, Washim, and Wardha districts, there were no major challenges faced.
- In Buldhana district, challenges related to the marketing and management of farm produce were faced.
- In Yavatmal district, frequent changes in the guidelines of the components had created problems for the beneficiaries.

#### c) Challenges faced by Project Specialist HRD

- PS-HRDs in Amravati, Akola, Buldhana and Jalgaon districts had revealed that timely fulfilment of team members posts at district and cluster level was a challenge.
- In Washim district, involving officials from other departments in training had been a challenge. Proper communication with higher authorities should be maintained before conducting the training.
- In Wardha district, farmers hesitated to participate in training due to traveling expenses. Therefore, provisions should be made through the project to cover the expenses and increase participation.



- PS-HRD in Yavatmal district had suggested that traveling costs for participants attending the training should be incurred through the VCRMC account, which would help increase participation.

#### d) Challenges faced by Project Specialist Procurement

- As conveyed by PS-Procurement in Amravati, Akola, Buldhana, Jalgaon, and Washim districts, they hadn't faced any challenges.
- In Wardha district, it was observed that the involvement of PS-Procurement should be essential in each purchase, but it was not happening presently.
- In Yavatmal district, PS-Procurement was not a member of the purchasing committee of items for SHGs and FPCs, which means they were not aware of the purchasing of items for SHGs and FPCs.

### Specific questions for Procurement Specialist

#### Trainings received

- PS-Procurement from Amravati, Akola, Buldhana, and Jalgaon district attended a residential training on procurement in August 2022. They also attended online trainings related to procurement.
- In Washim district, PS-Procurement attended a 2-day training on zero tillage technology at Saguna Bagh, Neral, Dist. Raigarh on 22-23 June 2022.
- However, PS-Procurements in Wardha and Yavatmal district had not attended any procurement-related training since joining.

#### Requirement of more training

- As reported by PS-Procurement in Amravati, Akola, Buldhana, Jalgaon and Washim districts, the trainings attended had been beneficial. It was recommended that updated trainings should be conducted at regular intervals to keep up with changes in guidelines and responsibilities.
- As per the disclosure made by PS-Procurement in Wardha and Yavatmal districts, more trainings related to procurement needed to be organized every six months for better understanding of the project specialist, even though they had not yet attended any such training.

## **Specific questions for HRD Specialist**

### **VCRMC meetings attended in past six months**

- Over the last 6 months in Akola district, the HRD-Specialist attended a total of 13 VCRMC meetings where they reviewed the progress of VCRMC members, women members, cluster assistants, and Krushi Tai's. Reviews of 02 Krushi Tai meetings were conducted online.
- In Amravati district, the HRD Specialist arranged visits to 2-3 VCRMCs per month to discuss cluster progress with Cluster Assistants and Krushi Tai's. Capacity building trainings and online meetings were also conducted for the cluster team.
- In Buldhana district, the HRD specialist attended 20-22 VCRMC meetings in the last 6 months. Online review meetings of Cluster Assistants and Krushi Tai's were conducted every 3 months.
- In Jalgaon district, 2-3 VCRMC meetings were attended per month and online trainings related to procurement were conducted for VCRMC members, Cluster Assistants, and Agriculture Assistants at the SDAO office.
- In Washim district, a total of 13-14 VCRMC meetings were attended by HRD-Specialist, and online review meetings of Cluster Assistants and Krushi Tai were conducted.
- In Wardha district, a total of 14-15 VCRMC meetings were attended HRD-Specialist, and at least one online meeting of Cluster Assistants and Krushi Tai was conducted every month.
- In Yavatmal district, a total of 8-10 VCRMC meetings were conducted in the last 6 months. At least one online review meeting of Cluster Assistants and Krushi Tai was conducted every month.

### **Initiatives to conduct cross learning and Knowledge sharing**

According to the discussions, a review meeting was conducted at the Sub-Divisional level for Krushi Tai, CA and Agri. Asstt. They discussed cross-learning and best practices from various clusters in the districts of Amravati, Akola, Buldhana, Jalgaon, Washim, Wardha, and Yavatmal.

### **Days spent in a month in field**

In Akola district, PS-HRD had visited 14-15 villages per month. In Amravati district, visits were arranged in 4-5 villages, in Buldhana district 9-10 villages, in Jalgaon district 6-7 villages, in Washim district 6-7 villages, in Wardha district 7-8 villages, while in Yavatmal district, visits were arranged in 5-6 villages per month.

### **Exposure visits conducted in last six months**

- PS-HRD in Amravati district reported that exposure visits had been arranged, but did not provide the exact number.
- In Akola district, one exposure visit was arranged in the last six months in Aurangabad district, with a total of 117 farmers attending. The subject was zero tillage techniques implemented by farmers.
- Due to the unavailability of funds, no exposure visits were arranged in Buldhana district during the last six months.
- Two exposure visits were arranged in Jalgaon district at Chalisgaon and Jain Food Industries.
- In Washim district, a total of 10-12 exposure visits were arranged within the district, benefiting a total of 70-80 farmers.
- No exposure visits were arranged in Yavatmal district, but they will be scheduled for November-December 2022. These visits allow farmers to witness and experience the activities and functioning of the unit, and can serve as a source of inspiration for them.

### **Stabilizing VCRMC data on Mahapocra website**

It was informed that the data was verified randomly by interacting with the VCRMCs and CAs. Additionally, regular interaction with the Cluster Assistants helped to ensure that the data was up to date.

### **Assessment of performance of Krushi Tais**

Krushi Tais submitted their self-evaluation report to the Agriculture Assistant, which was assessed on quarterly basis. These performance assessment reports had been submitted and recommended for the release of remuneration towards VCRMC and SDAO. In case funds were not available with VCRMC, the same will be communicated to SDAO. It was imperative for the cluster team to follow this process regularly to avoid any delay in releasing the remunerations.

### **Efforts for Digital Saksharta training for women**

Review meetings were organized in the districts of Amravati, Akola, Buldhana, Jalgaon, Washim, Wardha, and Yavatmal for both Community Activators and Krushi Tais. The importance of PMGDISHA registrations for women was discussed during these meetings. District and taluka coordinators were also engaged in these meetings. Additionally, meetings were held at the TAO level in all districts. As of now, 440 women had registered under PMGDISHA in Akola district, while data from other districts were yet to be reported.

### **Efforts for alternative livelihood of the tribal community**

- In Amravati district, a distinct MLP had been created for the tribal community. This MLP had been submitted for approval. Detailed information on apiculture and fisheries had been shared with the community. Most of the tribal communities reside in Chikhaldara, Dharni, and Achalpur Tehsil of the district.
- In Akola district, village-wise meetings were arranged in tribal villages to share information about various project activities. These villages were located in Akola, Akot, Barshitakali, and Patur tehsil of the district. The community was urged to participate in the project activities.
- In Buldhana district, it was observed that most of the tribal communities do not own land. Goat rearing was their main activity, but it was not included in the project, resulting in a low response rate. Meetings were organized, and information about various project activities was provided to the community.
- In Jalgaon district, approximately 1200 farmers had registered under the PESA act, and about 77% of landless farmers had registered in the district. Revolving funds had been arranged through the Forest Department for villagers who own forest lands.
- In Washim district, training on poultry and apiculture was conducted for the community in Malegaon Tehsil. Detailed information was provided to the community.
- In Wardha district, a special MLP had been prepared for the tribal community in the cluster. Informative sessions had been conducted for sericulture and other businesses.
- In Yavatmal district, a list of farmers who had been allotted forest land was collected from the Collector's office. Separate meetings were arranged with the farmers, and information about various project activities was shared with them.

### **Specific questions for Agribusiness Specialist**

#### **Sufficiency of proposals for FPC**

- In Amravati, it had been observed that sufficient proposals had not been received, even though FPCs had not completed the one-year eligibility criteria.
- In Akola district, the PS-AB post was vacant, but approximately 257 FPCs/SHGs had benefited from and received subsidies.
- In Buldhana district, more than 150 proposals had been received.
- In Jalgaon district, 28 FPCs/SHGs had received subsidies, while 14 proposals were in progress. A total of 45 proposals had been received so far.
- In Washim district, over 15 FPCs had benefited, and other proposals were currently being processed.

- In Wardha district, more than 20 proposals had been received. FPCs had faced challenges with lease agreements and obtaining finance from banks.
- In Yavatmal district, approximately 25 FPCs had submitted proposals, but due to insufficient funding availability, they were unable to participate in the activity.

### **New business opportunities identified**

- In Akola district, the PS-AB post was currently vacant.
- In Amravati district, activities such as grain processing units, dal mills, godowns, and customer hiring centers offered business opportunities for FPCs/FPOs.
- In Buldhana district, activities such as oil mills, cleaning, grading, and drying units presented business opportunities for FPCs/FPOs.
- In Jalgaon district, banana processing units and cleaning and grading of grains offered business opportunities for FPCs/FPOs.
- In Washim district, activities such as processing units powered by solar energy and preparation of Nimboli Ark (neem cake and liquid) provide business opportunities for FPCs/FPOs.
- In Yavatmal district, dehydration units, geranium units, turmeric processing units, farm produce selling shades, and harvesters offered business opportunities for FPCs/FPOs.

### **Specific measures to promote FPCs in tribal areas**

- In Amravati district, the cluster team was trying to secure funding from the bank to support the FPC.
- In Akola district, the vacant PS-AB post had resulted in a lack of updated information.
- In Buldhana, Jalgaon, and Washim districts, no FPCs had submitted proposals.
- In Wardha district, two tribal FPCs had been established with the assistance of the Kamalnayan Jamanlal Bajaj Foundation (KJBF), but no proposals had been received at time of visit.
- In Yavatmal district, meetings were held in tribal villages to provide information to villagers, and the process had now been initiated, but no proposals had been received yet.

### **Initiatives taken to increase the number of proposals**

- In Amravati district, cluster and village level meetings were organized and shared the information through CA.
- In Buldhana, Jalgaon, Washim, Wardha and Yavatmal district, extension and information sharing were done through ATMA Tehsil Coordinators, Agri. Asstts and Cluster Assistants.

- Special meetings at village and Tehsil level had conducted and shared the information.

### **Specific questions for Agriculture Specialist**

#### **Received any training on soil and water conservation**

- In Amravati district, the PS-Agri. post was vacant.
- Separate training sessions on Soil and Water Conservation had been arranged in Akola, Jalgaon, Washim, and Yavatmal districts, which will prove useful for planning and implementing activities.
- However, it was observed that training on Soil and Water Conservation had not been arranged in Buldhana and Washim districts.

#### **Opinion on the soil and water conservation**

- In Akola district, due to most of the area being kharpan, only limited activities had been implemented. However, Nala Deepening and Farm Ponds were successfully implemented in the area under the Jalyukt Shivar Abhiyan, which had proven beneficial for storing surface water.
- In Buldhana district, only small works had been implemented so far due to changing work guidelines and issues with the NRM app, which had hampered the planning and implementation of activities.
- In Jalgaon district, Well recharging structures were implemented under the technical guidance of the GSDA, and planning for other activities was in progress. Approved activities will be implemented in the upcoming summer season.
- In Washim district, Graded Bunding works were successfully implemented, resulting in an increase in groundwater levels and a decrease in erosion. This had helped to improve moisture availability for rabi crops.
- In Wardha district, activities such as Nala Deepening, CNB, Graded Bunding, and Well recharging structures were implemented as per the sanctioned estimates and activities mentioned in the MLP. However, more work needs to be implemented in the future.
- In Yavatmal district, Graded Bunding and Nala Deepening activities were implemented, leading to an increase in groundwater levels and an expansion of the rabi area in the district.

#### **Requirement of Training**

In Akola district, additional training was needed. In Buldhana, Washim, Wardha, and Yavatmal districts, there was a need for training on skill development to improve the implementation skills. In Jalgaon district, training on well recharging structures should be arranged to improve the knowledge of the participants.

### Information needed from agro-met advisory services

- In Akola district, the PS-Agri. had indicated that agro-met advisory should include information on insect and pest management, as well as market rates, to benefit farmers.
- In Buldhana district, the PS-Agri. had stated that accurate agro-met advisory was necessary for farmers and should be made available.
- In Jalgaon district, the PS-Agri. had emphasized the importance of registering farmers' mobile numbers to ensure effective dissemination of information.
- In Washim district, the PS-Agri. had suggested that providing daily agro-met advisory would help farmers plan their activities effectively.
- In Wardha and Yavatmal districts, the PS-Agri. had recommended that agro-met advisory should include information on insect and pest management to help farmers in these areas.

### Suggestions for making the implementation more effective

- An emergency fund may be created at the DPIU level to be used in case of need.
- PS-Agri. of Akola district suggested that the responsibility of villages should be minimized regarding CA, so that farmer registration and spot verification can be done on time.
- PS-Agri. of Buldhana suggested arranging exposure visits for effective planning and implementation of activities.
- PS-Agri. of Jalgaon district suggested interlinking the E-*Thibak* (e-Drip Irrigation) system under PMKSY with PoCRA-DBT for wider coverage of farmers and proper subsidy disbursement to SC-ST farmers with 90% subsidy.
- Recruitment of a coordinator at the SDAO level would be beneficial for efficient working. PS-Agri. of Washim district suggested minimizing the responsibility of Agri. Asstt. towards 14-15 villages so that he can work more efficiently.
- Subsidy should be released on time to get a better response from farmers, suggested PS-Agri. of Wardha district.
- PS-Agri. of Yavatmal district recommended providing a subsidy of 90% for protective irrigation and horticulture plantations. The compulsion of Drip irrigation should be removed by incorporating Sprinkler irrigation. Activities like Electric Motor Pump and Pipes should be released for farmers. More subsidy provisions should be made for Solar Fencing.



## Agro-metrological Services

For creating climate resilience for agriculture systems, agrometeorological services are an important component under the project. Agro-met advisory services are an important component under the project. PoCRA is working closely with the KVKs and IMD for dissemination of agro-met advisories. As part of the project, Seventy percent indicated that

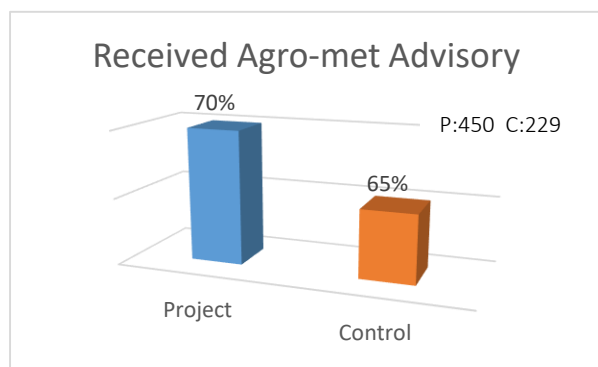


Figure 110: Received Agro-met Advisory

they are receiving the agro-met advisory services from Project areas, while 65 percent reported the same from Control villages. There was significant increase from CM-IVround, wherein 64 percent had reported receiving the advisory services.

With regard to question on the frequency of agro-met advisory services, almost about fifty percent respondents from both Project

and Control echoed two to three times a week! While 33 percent from Project and 27 percent from Control villages said they need daily forecast.

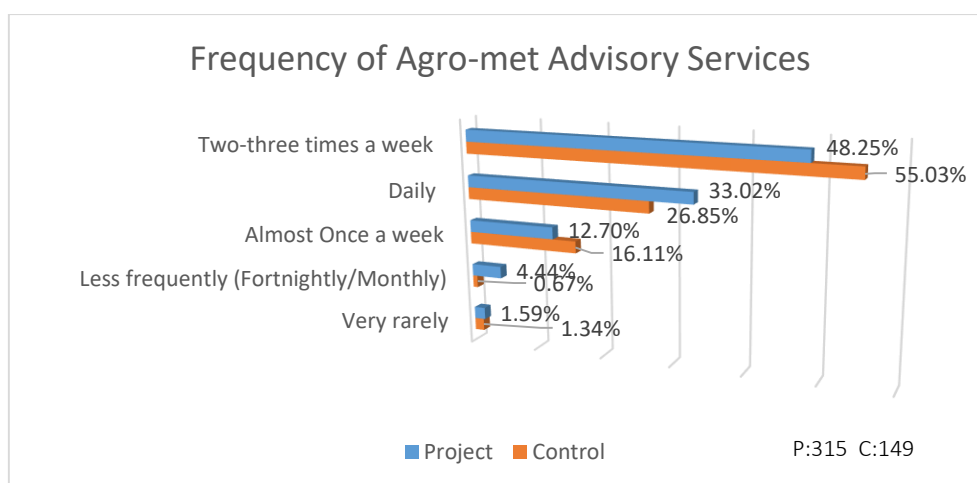


Figure 111: Frequency of Agro-Met Advisories

About 16 percent from Control villages and 13 percent from Project responded saying they need the services almost once a week. There were few takers for forecast with very less frequency or rarely. This indicates the digital awareness among Project beneficiaries for risk management and income enhancement.

We also asked about the source of Agro-met Advisory services, 87 percent from Project and 80 percent from Control villages agreed on Mobile phone, while 32 percent from Control Villages and 25 percent from Project said from agriculture department. About 9 percent from Control and 4 percent from Project villages said they receive it from KVK.



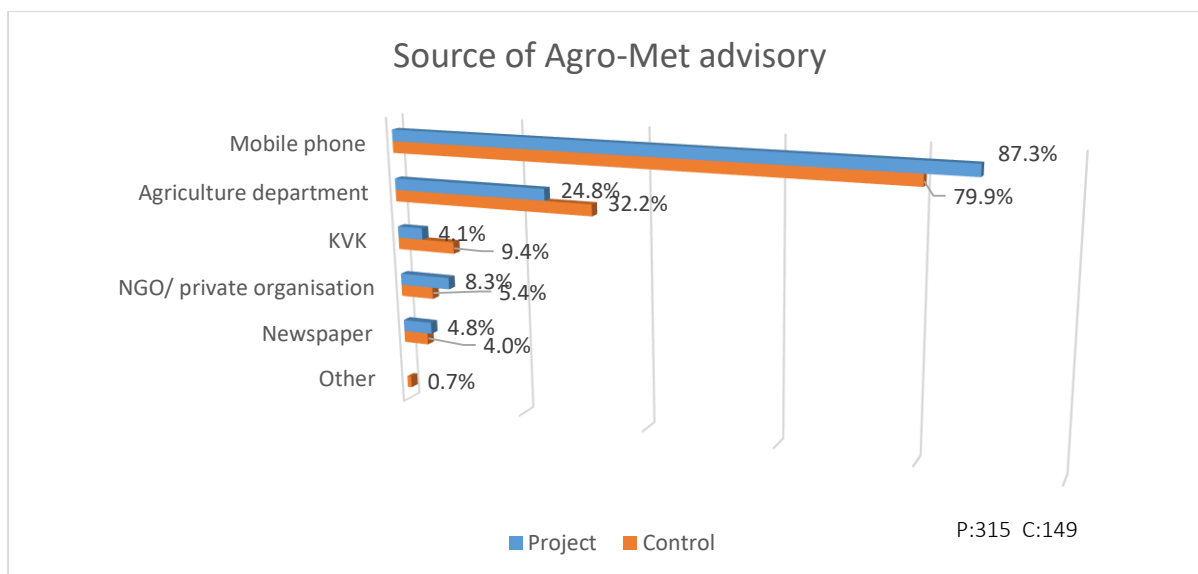


Figure 112: Source of Agro-Met Advisory

It was also asked what type of information they have received from these services, 93 percent from Project and 90 percent from Control villages said mostly weather forecasting.

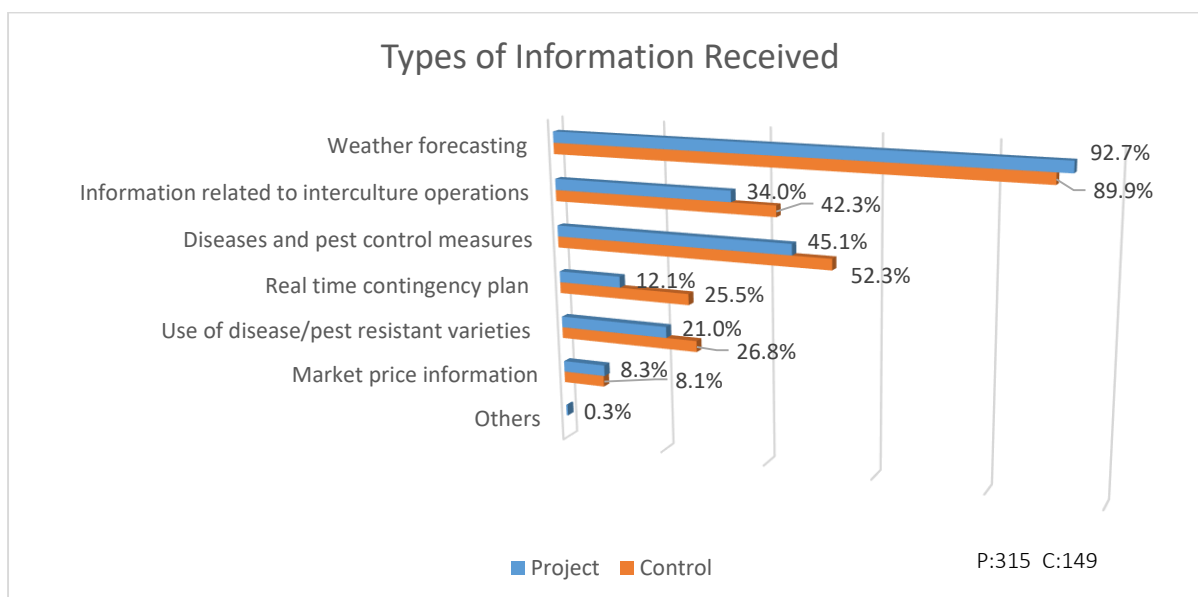


Figure 113: Types of Information Received

While 42 percent from Control villages and 34 percent beneficiaries from Project said that they received information related to intercultural operations. About 45 percent from Project and 52 percent respondents from Control villages said that they received information on disease and pest control measures.

On being questioned on do they use the agro-met advisory which they receive, 93 percent from Project and 90 percent from Control villages replied that they use the suggestions made through these advisories.

Regarding the feedback on Agro-met advisory services 83 percent from Project and 85 percent from Control villages said it was useful and relevant.

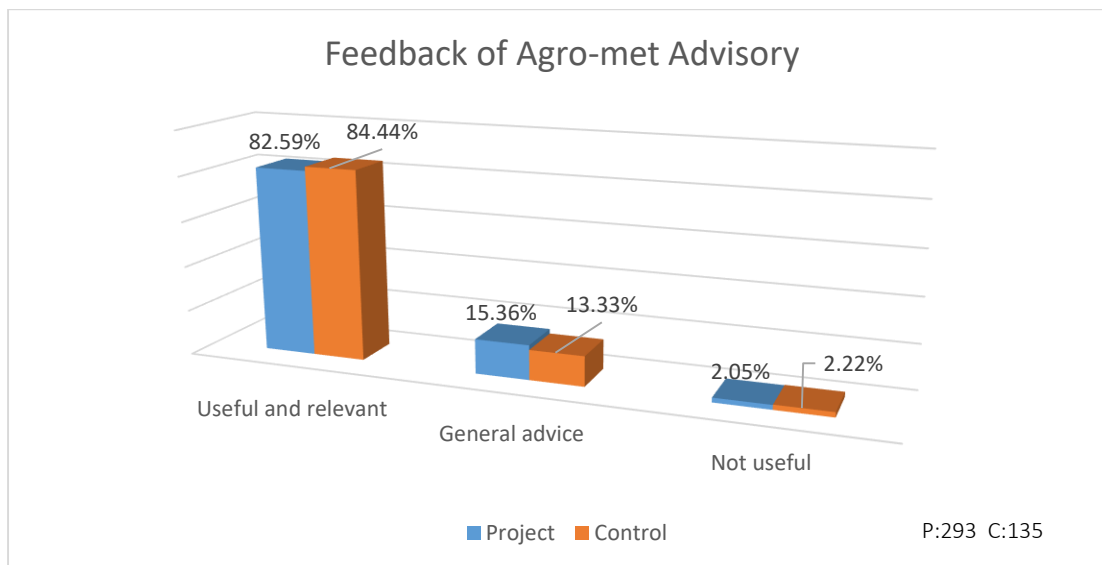


Figure 114: Feedback of Agro-met Advisory Services

Responding to question on benefits of agro-met advisory services, about 79 percent from both Project and Control villages said that it helps in taking timely decisions related in taking timely decisions related to initial stage of crop cultivation, 44 percent from Project and 51 percent from Control said that it helps in deciding irrigation frequency, 28 percent from Control and 51 percent from Control indicated that it helps in selection of certified seed varieties.

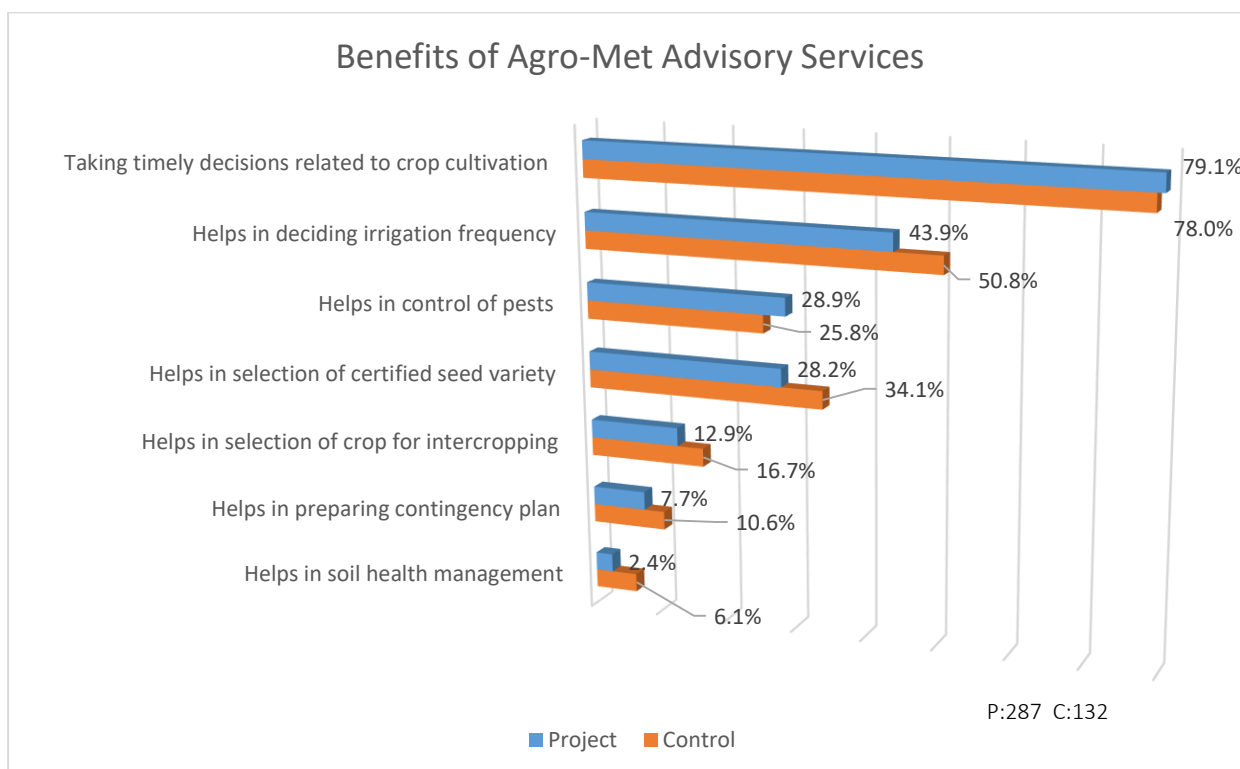


Figure 115: Benefits of Agro-met Advisory Services

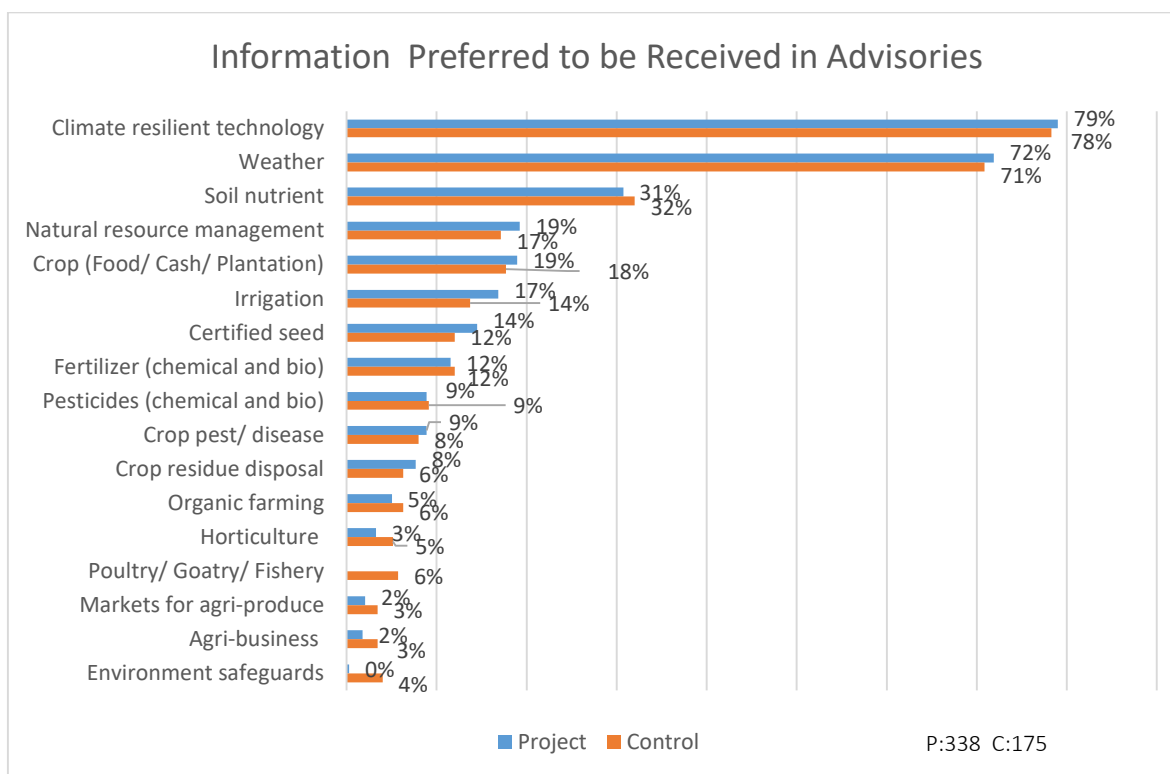


Figure 116: Information Preferred to be received in Advisories

On being asked if they would like to get agriculture and allied activity related information or advisory services through a mobile app, about 75 percent respondents from both Project and Control replied affirmatively.

When asked for suggestion on what agriculture related information or advisory they would like to receive, if a mobile app was developed, more than 78 percent respondents from both Project and Control villages said they want to receive information related to climate resilient technology.

About 71 percent respondents from Project and Control villages said they want information on Weather, about 31 percent from both sides wanted to have information on soil nutrient. About 19 percent beneficiaries from Project and 17 percent from Control villages wanted focus on natural resource management. More than 18 percent from Project and Control villages wanted focus on Crops for either food, cash or plantation. Seventeen percent beneficiaries from Project and 14 percent from Control villages wanted focus on Irrigation, while there were 14 percent takers from Project and 12 percent Control villages for information on certified seed. There were very few beneficiaries who wanted information on Fertilizer, Pesticides, Crop disease and pest information, crop residue disposal, organic farming, horticulture and other issues related to agriculture.

## 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.

As part of the CM-V Survey, total 10 Kharpan villages have been covered with total 96 beneficiaries, 7 percent of the beneficiaries were from DBT pre sanctions, 31 percent from DBT subsidy released, 47 percent were FFS Guest farmers and 42 percent were Host Farmers.

### Data from Beneficiary Survey

As a part of questionnaire in CM-V, respondents from Kharpan villages were asked about their awareness on salinity of their soil, 61 percent said they know while remaining 39 percent said they are not aware of it.

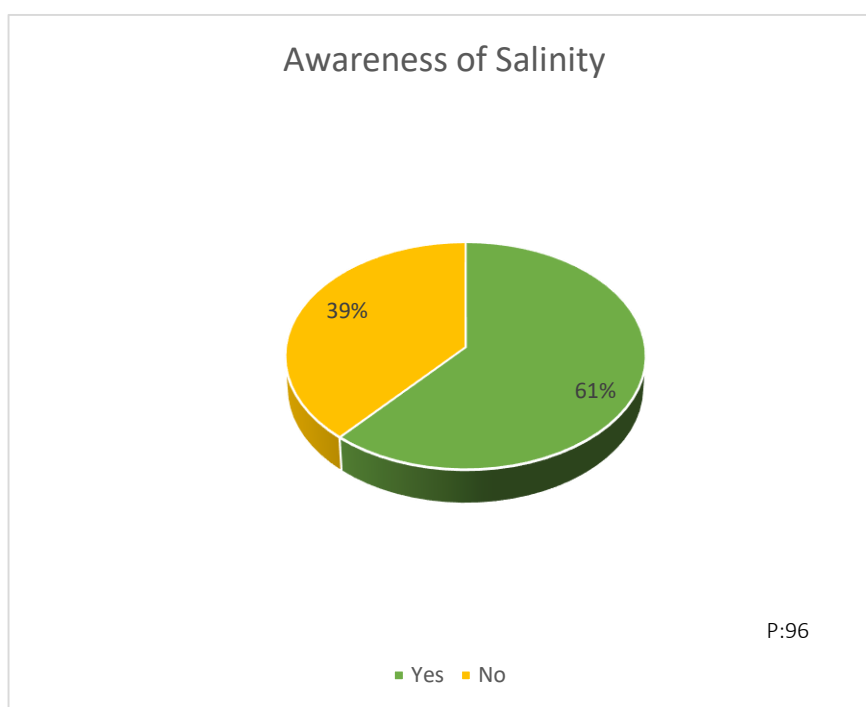


Figure 117: Awareness of Salinity

When asked if they have been given any information regarding treatment of the soil as part of the project, only 43 percent of the respondents said yes, while remaining 57 percent denied.

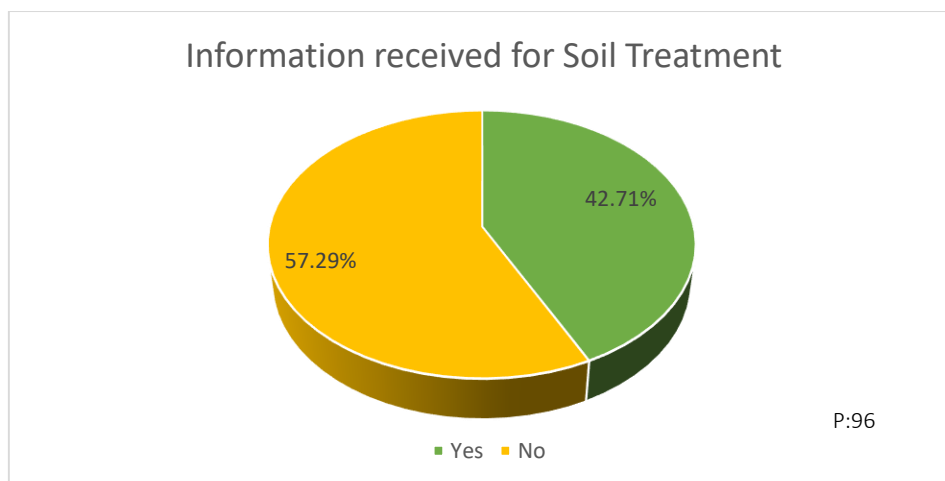


Figure 118: Information received for Soil Treatment

On being asked about the treatments that have been recommended for the soil, 76 percent said it was application of gypsum, 44 percent said introduction of inter-cropping, 20 percent said application of balanced dose of NPK and Zinc and 17 percent said application of micro-nutrients and

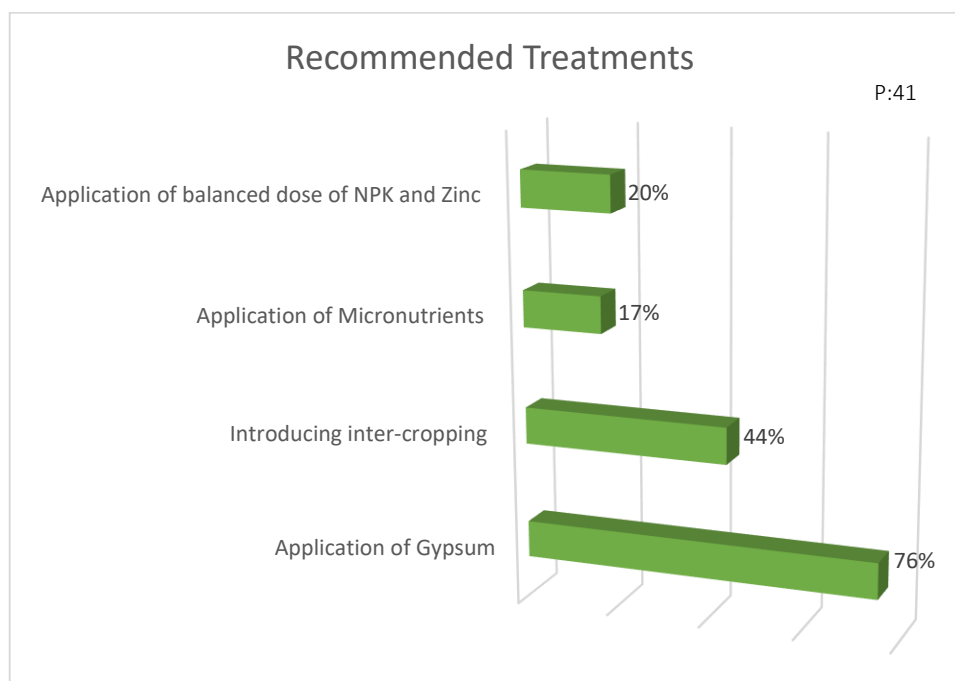


Figure 119: Recommended Treatments

When queried about Soil Testing, 85 percent respondents have not done the soil testing. Rest 15 percent have done the soil testing.

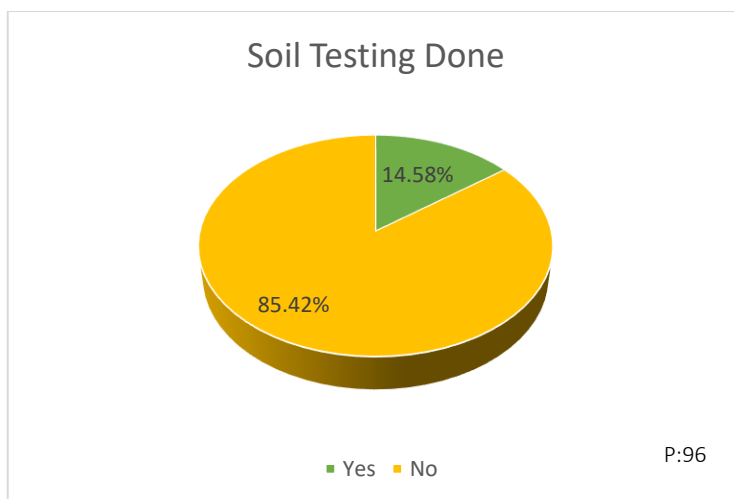


Figure 120: Soil Testing Done

Question was asked on the salinity of ground water, 68 percent of the respondents said that ground water was not saline, while 32 percent said it was saline.

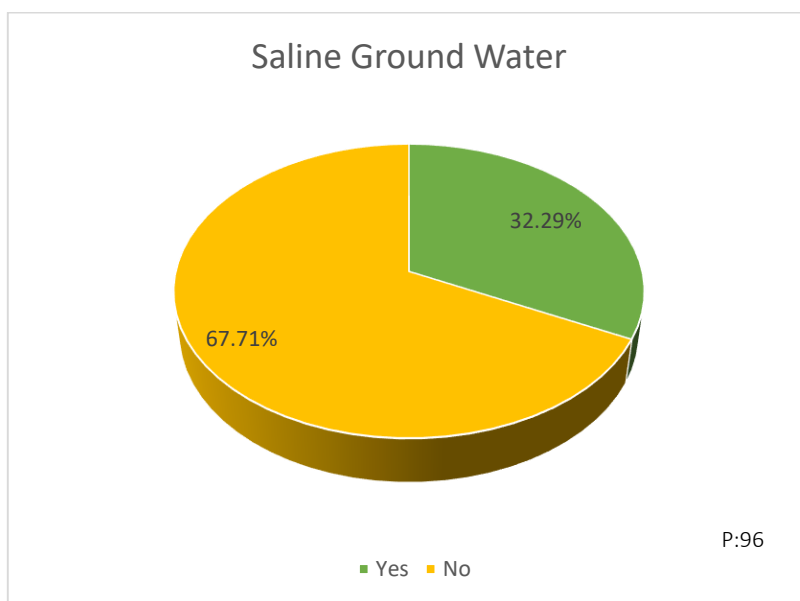
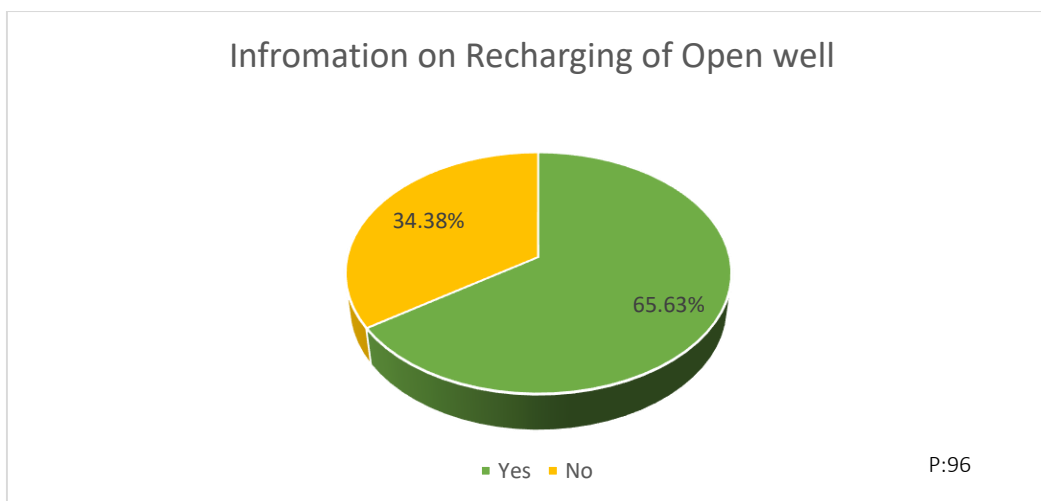


Figure 121: Saline Ground Water

### Well Recharge

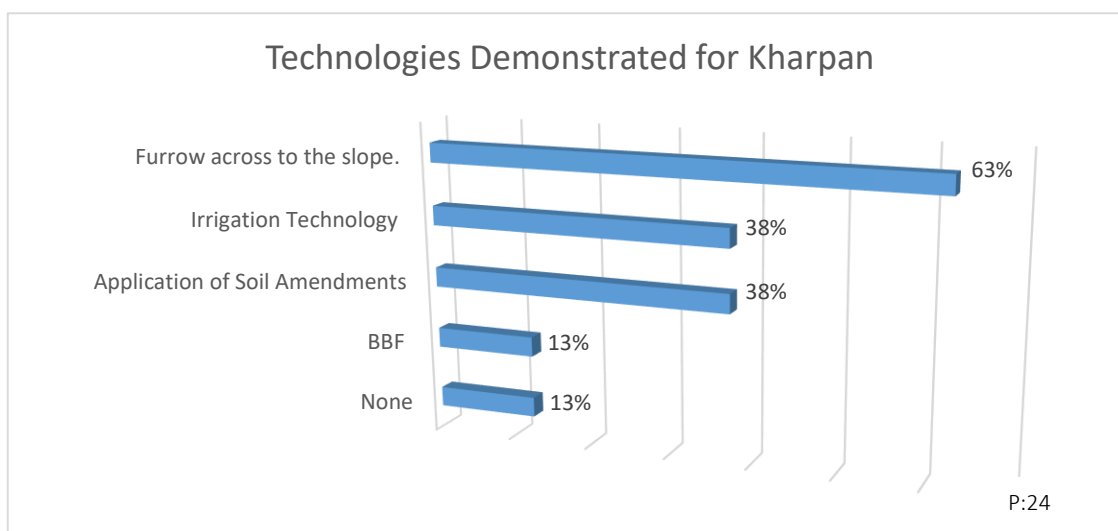
During the survey, it was observed that 70 percent respondents were already aware of recharging of wells

It was also asked if any information was provided for recharging open wells in the project, 66 percent said yes they were provided by the Project, while 34 percent said no such information was provided to them.



*Figure 122: Information on Recharging of Open Well*

When asked what were the technologies demonstrated for Kharpan areas, 63 percent said construction of furrows across the slope, 38 percent said irrigation technology, 38 percent said application of soil amendments, while 13 percent pointed out to BBF. Out of 24 respondents, only 6 said they are adopting demonstrated technologies.



*Figure 123: Technologies Demonstrated for Kharpan Areas*

It was observed that nobody responded for use of zero tillage method of farming in Kharpan villages.

### **Method of Irrigation used by Kharpan Village Beneficiaries**

Out of 96 respondents from Kharpan areas, it was recorded that 9 percent use Drip method of irrigation, 7 percent use Sprinkler, Flooding method was followed by 3 percent, other methods are used by 16 percent and remaining 38 percent opted for rainfed.

The method seggerigatiion of irrigation done because the 52 percent farmers are aware of salinity in their village, 17 percent reported that they follow the activities of fellow farmers and 10 percent got aware from the information by Agriculture Department.

It was asked if the salinity issue was resolved using the Project activities 51 percent respondent mentioned that the Salinity issue has been being resolved. Remaining 49 percent respondents said that salinity issue persists like water logging, poor crop production and increase in cost of cultivation.

### Observations of saline tract areas

#### Soil type

The soil type of saline tracts are mostly black cotton soils falling under vertisols which are medium to deep in depth. It has been observed that the soils in these areas are not only saline but also sodic in nature. After reviewing the soil health card of one of the farmers it has been evident that the 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. It was observed that the although the soils are saline the accumulation of salts on earth's surface was hardly seen in rainfed regions where irrigation was not applied.

#### Cropping pattern in saline tract area

Cotton was the major crop grown in the saline tract area which was followed by soybean, Pigeon pea, Green gram, Black gram and Sorghum during *Kharif* season. In *Rabi*, rainfed Chickpea was grown on very large scale in these saline tract areas followed by Wheat and Safflower in minor proportions. Area under summer crops were almost negligible whereas groundnut was grown in very limited area where facility of protective irrigation was available. Issues faced by farmers in saline areas:

Heavy black Cotton soils in these tracts are having very good water holding capacity and hence the poor drainage was the most important issue faced by the farmers. It was found that these soils are having a very hard pan below 20-30 cm depth because of which the percolation was severely affected causing poor drainage.

Due to salty water the farmers are not able to provide heavy irrigations resulting in accumulation of salts on soil surface and it restricts farmers from cultivating the high value crops and horticulture plantations in these areas.

#### Management of saline soils by farmers

- It was found that the farmers are very well aware about the salinity and the soil testing has been done in most of the saline villages and soil health cards are distributed by



Department of Agriculture, KVK's and Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola (Agriculture University).

- Farmers are using chemical fertilizers like Urea, DAP, SSP and other water soluble mix fertilizers to meet out the high nutrient demand of cotton crop to harvest optimum yield potential.
- Soil testing was conducted in the saline tract villages which has generated awareness among the farmers about the soil salinity and the optimum use of synthetic fertilizers was adopted by the farmers.
- Due to project interventions farmers are aware about using the bio-fertilizers like Rhizobium culture in case of leguminous crops to enrich atmospheric nitrogen fixation capacity in soil. Application of micronutrients in recommended dose can substantially increase the crop productivity.
- In case of cotton, where the crop was facing nitrogen and phosphorus deficiency the farmers are generally advised to use 2% DAP or 1% Urea and 1% Magnesium sulphate as spray solution at flowering and boll development stage resulting into reduction of leaf reddening in cotton crop which leads to the higher productivity.
- Awareness about the use of gypsum for reclamation of sodic soils was created through farmer field schools and demonstrations conducted at the field of host farmers. But, the application of gypsum required collective efforts from farmers for its purchase as it was not made available in small quantities by the local supplier and it requires additional cost which increases the cost of cultivation, bothering farmers to invest more.
- Adoption of sprinkler and drip irrigation systems in saline soils helped farmers to manage their resources effectively without any harmful effects on soil and crop production.

### **Recommendations by Expert for Saline soils:**

- Mono-cropping of cotton was observed on large extent in saline tract of *Purna* valley which needs to be signified with adoption of proper crop rotation and crop diversification with salt tolerant crops.
- Application of gypsum 2.5t/ha as an addition 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 to be done after 30 days of sowing to enhance rain water harvesting and crop productivity.
- Contour cultivation with opening of ridges and furrows after 30 days of sowing to enhance crop productivity and rain water.
- Cultivation of crops with broad bed furrows for in-situ moisture conservation and higher productivity in rainfed areas.
- Water conservation ditches upto 1.5% slope cross section ( $1.60 \text{ m}^2$ ) in deep black soils across the slope or on contour 75 to 100 m HI ( Harvesting Index ) for improved growth and yield for dryland fruit trees and intercrop in rainfed conditions. These activities should be included as individual activities instead as community activity which can accelerate the participation for saline soil reclamation.
- 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 community level to be promoted.
- Application of soil test based chemical fertilizers and micro-nutrients to ensure judicious and balance use of such fertilizers. Soil testing in the saline tract needs to gear up.
- Addition of organic manures like, FYM, compost, etc. helps in reducing the ill effect of salinity due to release of organic acids produced during decomposition and hence should be encouraged which was seemed lacking.
- Green manuring (for e.g. Sunhemp, *Dhaincha*, etc.) and or green leaf manuring (for eg. *Glyricidia*) also counteracts the effects of salinity and needs to be promoted in saline tract areas.
- Application of straw mulch had been found to curtail the evaporation from soil surface resulting in the reduced salt concentration in the root zone profile within 30 days from date of sowing through cultivation of intercrops such as green gram, cowpea and cluster bean with cotton crop.
- Application of Zinc sulphate 10-50 kg depending on the zinc status of soil to meet up the zinc deficiency in vertisols needs to be promoted to counteract the salinity.
- Application of 50t/ha fly ash to saline-sodic soils improves the physical and chemical properties of soils with improvement in major and micro nutrients of soils resulting into higher yields of major crops such as cotton, soybean, green gram, maize, sorghum, wheat and chickpea cultivated in Kharpan region.
- Afforestation on degraded/fallow lands with cultivation of suitable dryland crops/horticultural/agroforestry species (e.g. *Ber*, *Aonla*, Custard Apple, Tamarind etc.)

including food, fuel & fodder plantations depending upon soil and slope condition needs to be initiated to encourage the alternate land use.

- Capacity building of farmers for continuous cultivation of salt tolerant crops/horticultural crops along with soil test based judicious application of fertilizers and micro nutrients to prevent reoccurrence of saline soils.

## 6. Socio-Economic Profile of Respondents

As part of the CM-V 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 Respondents

Gender of the respondents revealed that 83 percent were males and 17 percent females in Project as compared to 20 percent females and 80 percent males in Control villages.

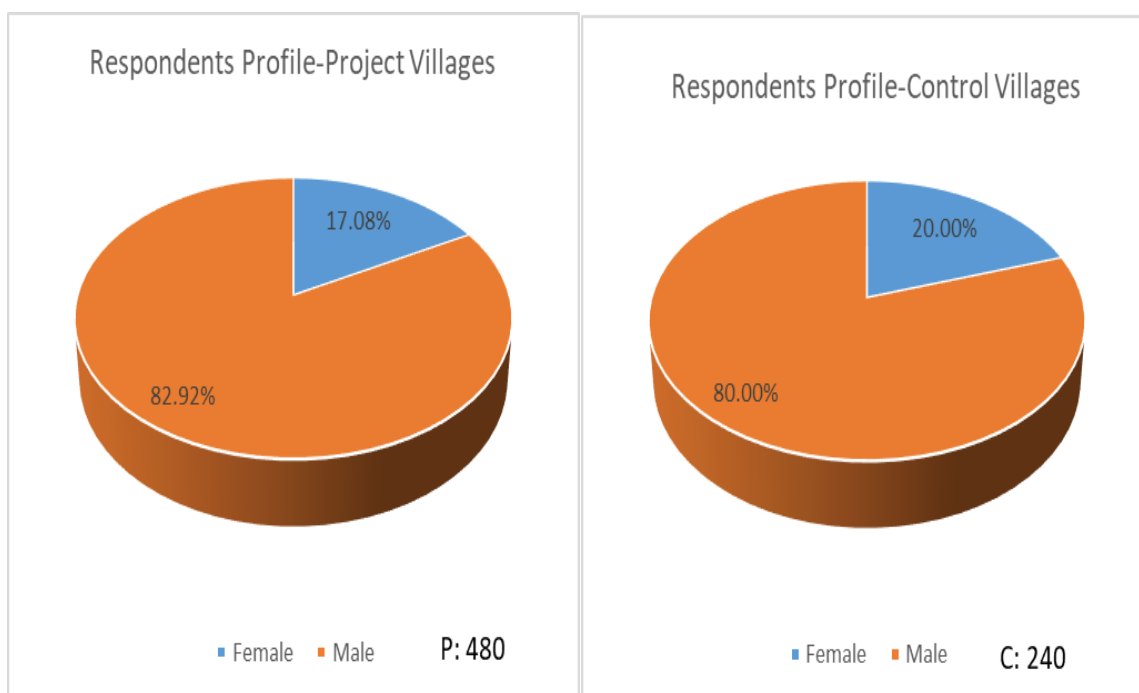


Figure 124: Gender of Respondents

Most of the beneficiaries of the Project and Control villages were head of the family as per the graph shown below.

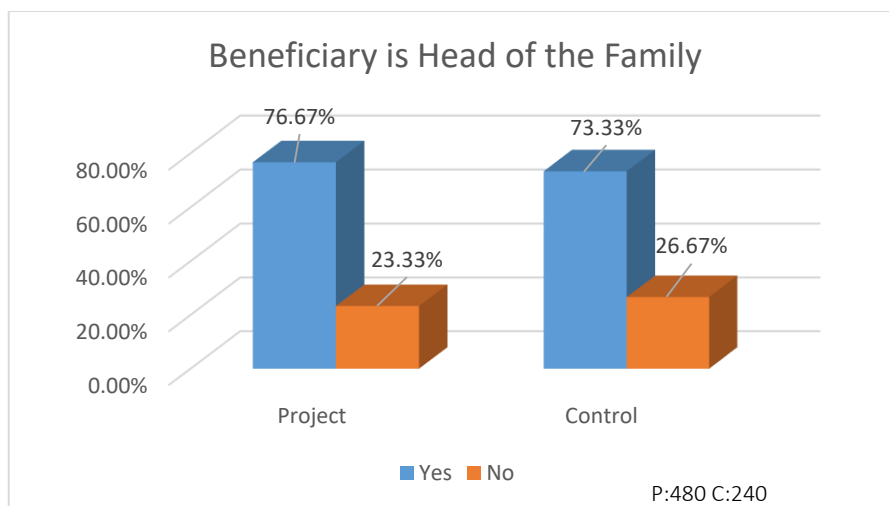


Figure 125: Head of Family

Gender of the family household head revealed that only 6 percent were female-headed households in Project villages as compared to 5 percent in Control villages.

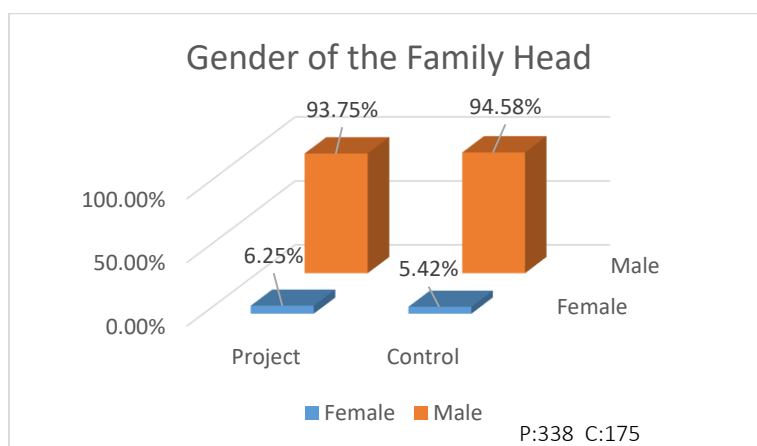


Figure 126: Gender of the Family Head

### Women Head with Mobiles

It was also found that only 50 percent of Women Head owned their mobile phones in Project villages, while in Control it was 46 percent.

### Social Category of Beneficiaries'

Social Category details showed majority of the beneficiaries from OBC category, 66 percent in project and 58% percent in Control villages. This was followed by Schedule Caste category, 13 percent in both Project and Control areas, Schedule Tribe were 8 percent in Project and 11 percent in Control Villages. Fiver percent beneficiaries were from Nomadic Tribes in Project, while 4 percent from Control villages. General category comprised 11 percent in project and 15 percent in Control villages.

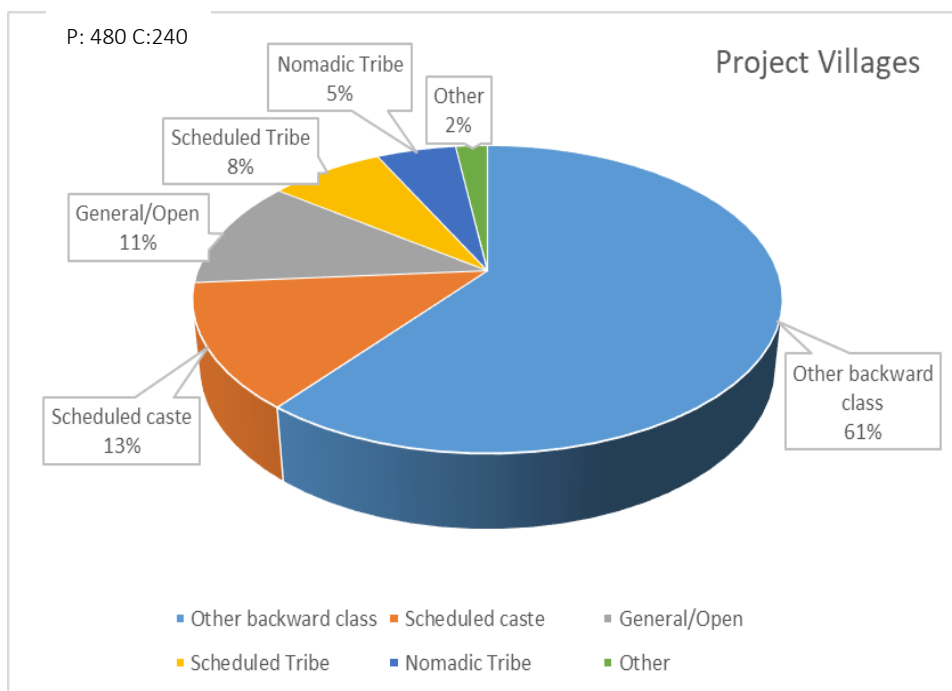


Figure 127: Social Category

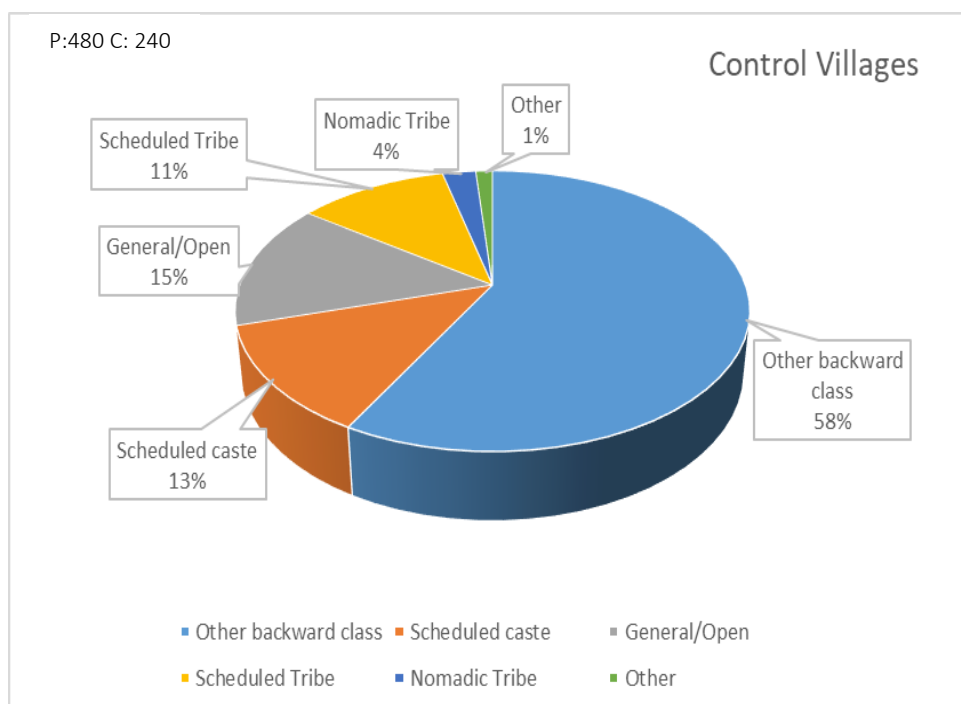


Figure 128: Social Category

## Marital Status

The data on marital status shows that 92 percent from Project and 94 percent from Control villages were married and 2 percent from Project and similar percent from Control villages were widowed.

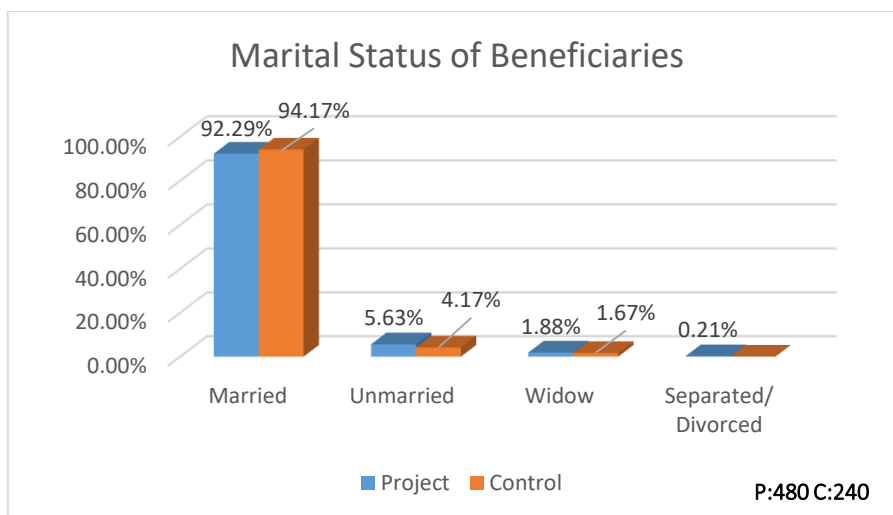


Figure 129: Marital Status of Beneficiaries

### Educational Qualifications of Beneficiaries

The data on Educational Qualification collected from CM-V Survey shows that 26 percent from Project and 25 percent from Control villages are Diploma holders but not graduate. Twenty Three percent from Project villages and 24 percent from Control are graduates, about 16 percent from Project and Control villages have passed Middle School exams. Only 8 percent from Project and 10 percent from Control are Post-graduates. About 15 percent beneficiaries from Project and 13 percent from Control villages had no schooling at all.

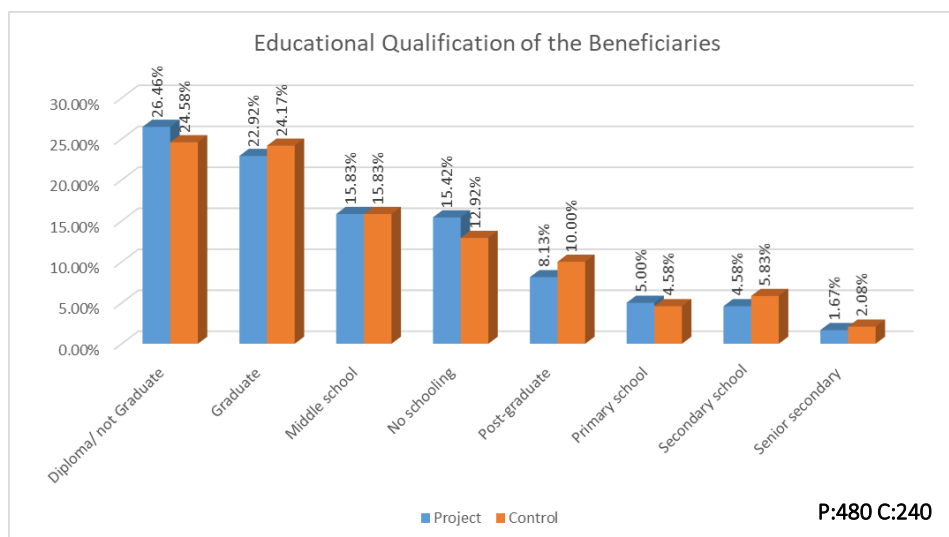


Figure 130: Educational Qualification of Beneficiaries

### Household Economic Status

Household economic status showed that majority of the respondents from both Project and Control were in the APL category. 72 percent from Project and 60 percent from Control belonged to the APL category, whereas 27 percent from Project and 40 percent from Control

villages were under BPL category. The BPL beneficiaries from Project had decreased from 34 percent to 27 percent as compared to CM-V round and the figure had increased from 36 percent to 40 percent in Control villages. This shows that there was increase in income due to different project interventions as part of the project.

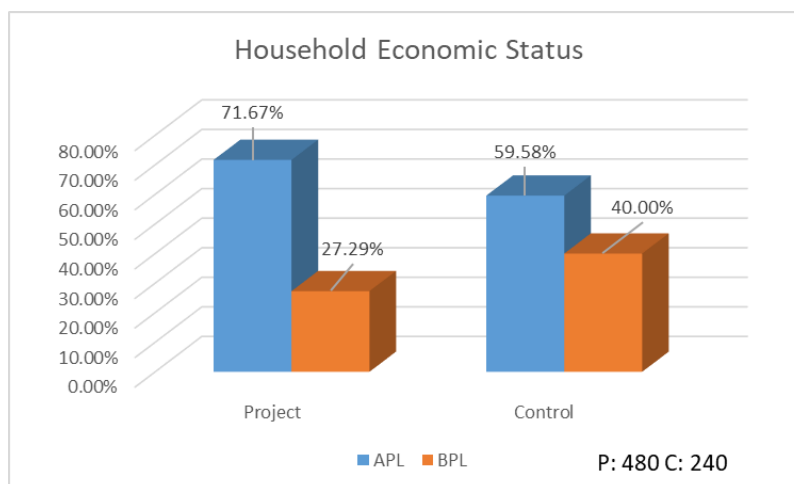


Figure 131: Household Economic Status

### Average Annual Income of the Households

Average annual income of the households was also recorded as part of CM-V. Project villages reported annual average income of Rs. 1,74,306 as compared to Rs. 1,58,031 in control villages. The project activities are leading to impact and increase in income of the beneficiaries' as seen from the income reported both in project and control villages.

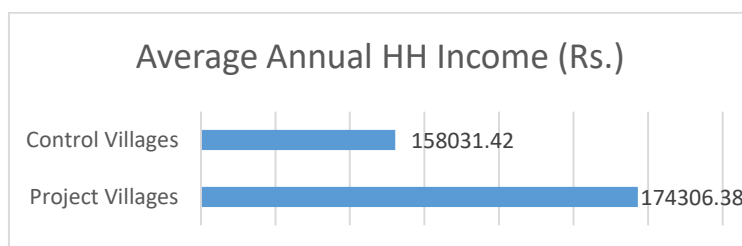


Figure 132: Average Annual Income

### Source of Income of the Households

The major source of Income of beneficiaries from both Project and Control was from Agriculture, which accounts to 93 to 96 percent respectively. The second major source of income was earning as Agricultural Labourers which account 7 percent in Project and 12 percent in Control villages.

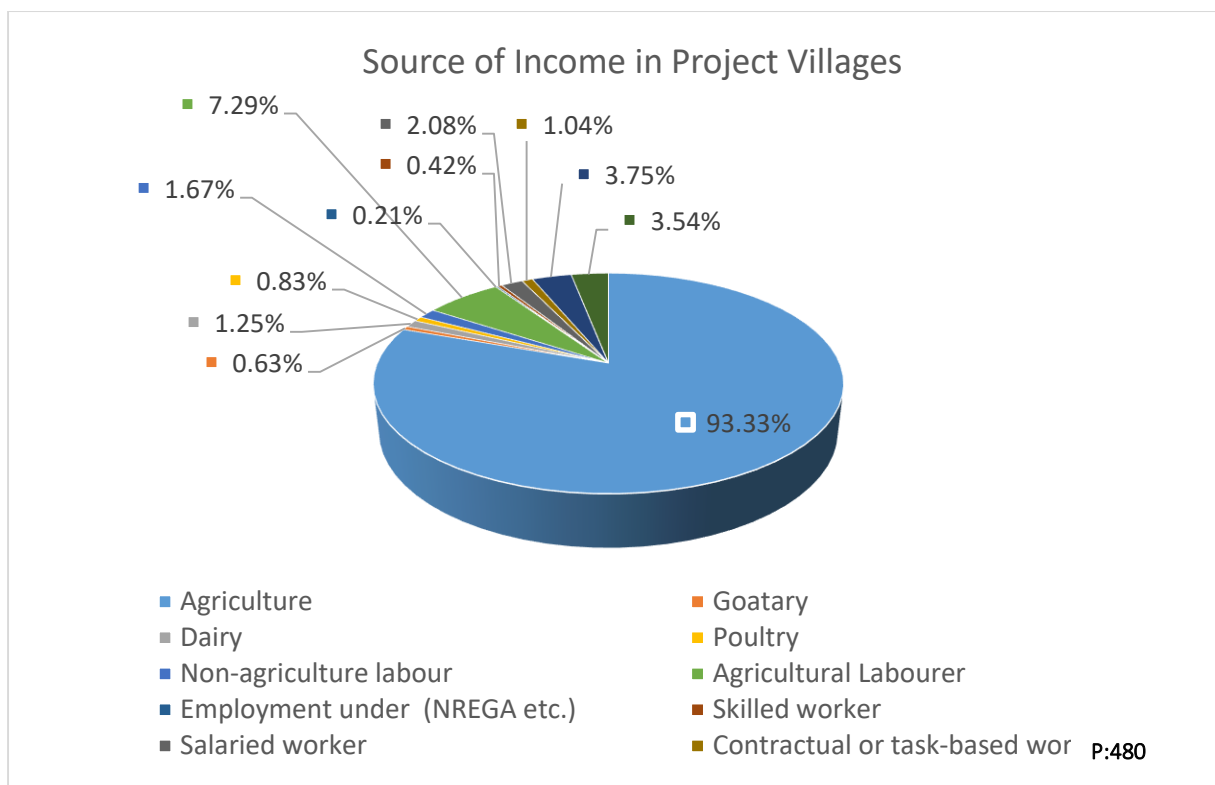


Figure 133: Source of Income in Project Villages

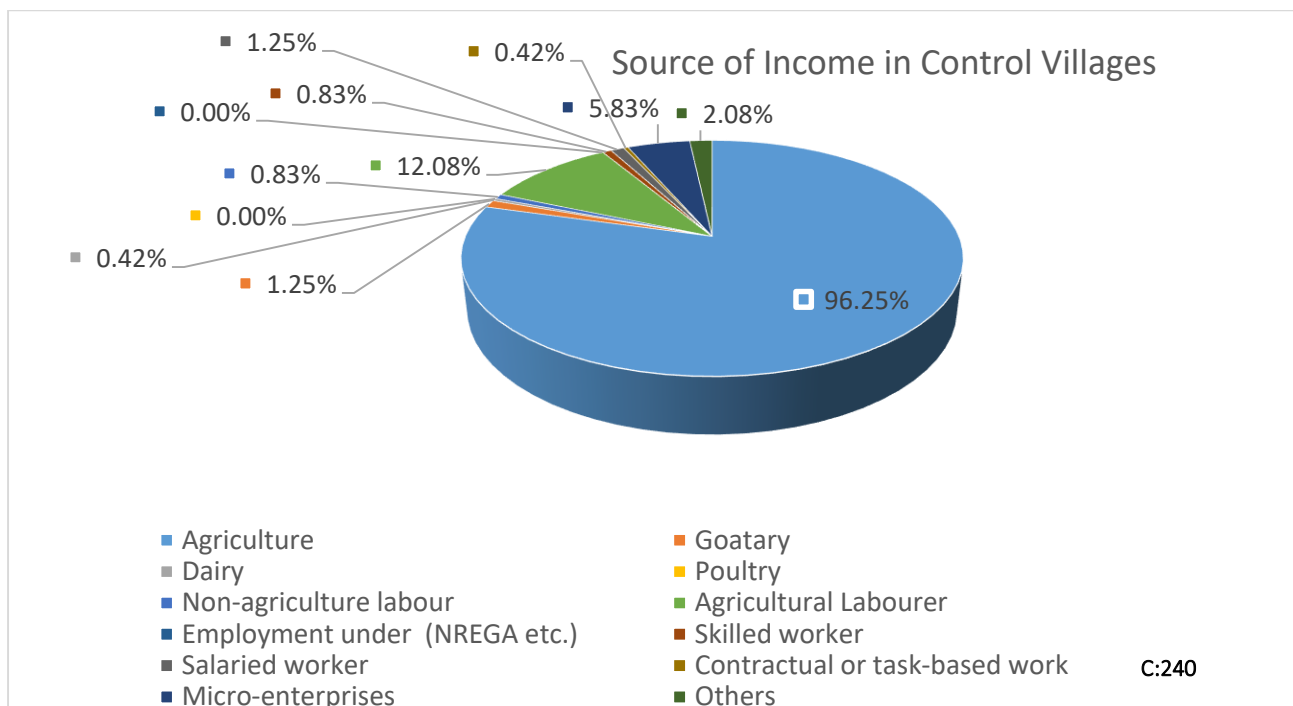


Figure 134: Source of Income in Control Villages

## Family Size of the Beneficiaries



In CM-V, we also asked questions on the family size of the beneficiaries. It was recorded that 80 percent of the beneficiaries from Project and 69 percent from Control villages have joint families, while 20 percent from Project and 31 percent from Control villages have nuclear families. Extended family was below one percent in Project areas, while none reported from Control.

### Institutional Access

As part of the CM-V Survey, beneficiaries were asked whether they are part of any institution. 36 percent in Project and 33 percent in Control reported to be the part of SHGs. Further, 14 percent in Project and 13 percent in Control reported to be the part of FPCs. It was also found that, 5 percent were part of VCRMCs in Project villages, while One percent in Project and none from Control villages were part of Gram Panchayat.

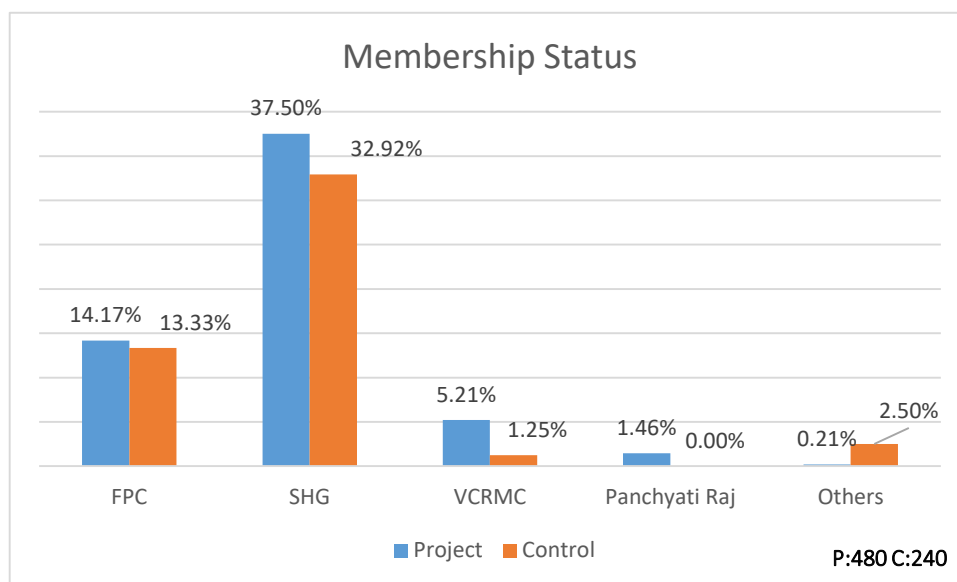


Figure 135: Institutional Access

## 7. Case Study: Ghusar, Tehsil and District-Akola

The field visit by NABCONS Experts was conducted on 27<sup>th</sup> September 2022 along with the officials from Department of Agriculture viz., Ms. Dipali Atambar (Agriculture Assistant), Sh. Shyam Gawai (Cluster Assistant) and Ms. Radhika Tidke (Krushi Tai) to the village of Ghusar, which was located in the Vidharbha region and falls under the Amravati Division.

The village is situated at Latitude 20.7717°N & Longitude 77.0583°E and 10 Km away from Akola district head quarter and has the independent Gram Panchayat having 11 members.

As per the Population Census of 2011, Ghusar village had a population of 3770 distributed in 833 families. Of the total population, 1965 were males and 1805 were females. The population of children aged 0-6 years was 438, which makes up 11.62% of the village's total population.

The average sex ratio of Ghusar village was 919, which was lower than the state average of Maharashtra (929). The child sex ratio for Ghusar as per the 2011 census was 888, which was also lower than the state average of Maharashtra (894). However, Ghusar village has a higher literacy rate as compared to state literacy. In 2011, the literacy rate of Ghusar village was 86.97% compared to 82.34% of Maharashtra. Male literacy stood at 92.09% while female literacy rate was 81.43% in Ghusar.



The total geographical area of Ghusar was 2450.99 hectares, out of which non-agricultural area was 276.65 hectares. The area under irrigation was only 297.0 hectares, reflecting the scarcity of irrigation resources in the village.

According to the Maharashtra Agricultural Census on Taluka wise agricultural data of crop cutting experiments (2016-17 to 2020-21), the productivity of major field crops on an average in Akola taluka was 1084.32 kg/ha Soybean, 1111.9 kg/ha Cotton, 1657.9 kg/ha Pigeon pea,

395.52 kg/ha Green gram, 378.5 kg/ha Black gram, and 901.08 kg/ha Sorghum. These crops were grown under rainfed conditions during the *Kharif* season and Gram in *Rabi*.

The total area of the village comes under Kharpan and soil type was black cotton soil, therefore water stagnation was a challenge. Godown/ Small Warehouse, Tractor and Implements, Shade-net house and micro irrigation equipments were not available at the village. Farmers had faced the challenges in storing of the farm produce due to non availability of storage structures. Farming operations did not happened on time, due to less availability of Tractors and Implements. The farmers were not able to provide the protective irrigation to the crop due to non availability of micro irrigation systems. In addition, farmers were not well aware about the seed production plots and Shade-net house. It was observed that there was less awareness about the social and environmental safe guards in the village, before the implementation of the Project.



Figure 136: Interactive meeting with VCRMC Member at

More than 80% of the cultivable area was completely rainfed, and very little area was cultivated under *Rabi* season due to non-availability of water resources structures. Under such constraints, the productivity of chickpea was 1043.54 kg/ha, wheat 1993.76 kg/ha. However, due to the

introduction of the PoCRA project, water resources have been considerably developed in the Akola tehsil, bringing more area under cultivation, especially during the *Rabi* season, and thereby increasing the cropping intensity with more income over the years for farmers. It was observed that the productivity of major *Kharif* and *Rabi* crops has considerably improved in the village of Ghusar due to the introduction of project interventions and the adoption of improved technologies and cultivars by the farmers.

### Rainfall pattern of Akola district

The normal rainfall pattern in this area consists of: 689.5 mm during the Southwest Monsoon, 80.7 mm during the Northeast monsoon (which occurs from October to December), 28.7 mm during Winter (January to March), and 19.7 mm during Summer (April to May). In total, the annual rainfall was typically 818.6 mm, spread out over 46 rainy days.

However, during the *Kharif* season in 2021 (which runs from June to September), the monsoon rainfall was higher than normal at 959.8 mm. This excess rainfall was actually beneficial for crops, as it served as protective irrigation for both *Kharif* and *Rabi* crops. The rainfall during

October to December was 116 mm, bringing the total rainfall for the year to 1075.8 mm, which was higher than the normal.

The excess rainwater has helped to increase the area of land that can be cultivated during the *Rabi* season, thanks to the significant amount of groundwater recharge that occurred.

*Table 16: Monthly rainfall pattern during 2021-22 for Akola District:*

| Akola     |                      |             |             |
|-----------|----------------------|-------------|-------------|
| Month     | Actual rainfall (mm) | Normal (mm) | % Deviation |
| January   | 9.7                  | 9           | 7.8         |
| February  | 6.5                  | 10.2        | -36.3       |
| March     | 14.1                 | 9.5         | 48.4        |
| April     | 2                    | 3.1         | -35.5       |
| May       | 10.9                 | 16.6        | -34.3       |
| June      | 249.7                | 150.5       | 65.9        |
| July      | 348.7                | 212.2       | 64.3        |
| August    | 148.4                | 215.7       | -31.2       |
| September | 213                  | 111.1       | 91.7        |
| October   | 72                   | 52.3        | 37.7        |
| November  | 1.4                  | 20          | -93.0       |
| December  | 42.6                 | 8.4         | 407.1       |

Source: AICRP on Agro-meteorology, Dr.PDKV, Akola

### Status of applications in village Ghusar

- 1) Total applications : 702
- 2) Pre sanctions: 345
- 3) Direct Benefit Transfer: 154

### Agricultural activities implemented in village Ghusar

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

- 1) Drip irrigation: 02

- 2) Farm mechanization: 07
- 3) Seed production: 92
- 4) Shade net house: 1
- 5) Sprinkler irrigation: 39
- 6) Storage godowns: 05
- 7) Custom hiring centers: 02

Table 17: Details of disbursement for activities

| S.No. | Activity                                     | No. of Beneficiaries | Disbursed Amount (Rs.) | Remarks                                                                                        |
|-------|----------------------------------------------|----------------------|------------------------|------------------------------------------------------------------------------------------------|
| 1.    | Seed Production                              | 96                   | 10,56,445.00           | Soybean (Kharif)-10, Greengram (Kharif)-12, Blackgram (Kharif)-13 & Chick pea (Rabi) (Gram)-71 |
| 2.    | Sprinkler Irrigation                         | 48                   | 8,73,410.00            |                                                                                                |
| 3.    | Farm Mechanization-Tractor                   | 05                   | 840800.00              |                                                                                                |
| 4.    | Farm Mechanization-BBF/Seed Drill Fertilizer | 06                   |                        |                                                                                                |
| 5.    | Farm Mechanization-Rotavator                 | 01                   |                        |                                                                                                |
| 6.    | Diesel Engine                                | 02                   | 21607.00               |                                                                                                |
| 7.    | Electric Motor Pump                          | 02                   | 28700.00               |                                                                                                |
| 8.    | Drip Irrigation                              | 02                   | 213267.00              |                                                                                                |
| 9.    | Shadenet                                     | 01                   | 692811.00              |                                                                                                |
| 10.   | Individual Farm Pond                         | 01                   | 30000.00               |                                                                                                |
| 11.   | Farm Field School (FFS) - Host Farmer        | 06                   | 16800.00               |                                                                                                |
|       | <b>Total</b>                                 | <b>170</b>           | <b>37,73,840.00</b>    |                                                                                                |

Table 18:: Details of disbursement to the FPC &amp; SHGs

| Sr. No. | Name of Farmer Group                       | Activity                                | Storage Capacity in MT | Registered as | Types of groups members | Proposal Amount (in Rs.) | Disbursed Amount Rs. | Current Status                                               |
|---------|--------------------------------------------|-----------------------------------------|------------------------|---------------|-------------------------|--------------------------|----------------------|--------------------------------------------------------------|
| 1       | Jaya Pharma Producer Company Ltd.          | Construction of Godown/ Small Warehouse | 200                    | FPC           | Mixed                   | 1999600.00               | 1199476.00           | Had stored Cotton in Godown on non rental basis.             |
| 2       | Gurudev Shetkari Utpadak Gat               | Establishment of Custom Hiring Centre   | 200                    | SHG           | Mixed                   | 1015520.00               | 609312.00            | CHC Services availed by the members of the group.            |
| 3       | Shri Sant Dnyaneshvar Shetkari Utpadak Gat | Establishment of Custom Hiring Centre   | 200                    | SHG           | Mixed                   | 1975000.00               | 858000.00            | Services availed by the members of the group.                |
| 4       | Mauli Shetkari Utpadak Gat                 | Construction of Godown/ Small Warehouse | 400                    | SHG           | Men                     | 3992000.00               | 2393400.00           | SHG members had stored Cotton in Godown on non rental basis. |
| 5       | Jay Gajanan Shetkari Utpadak Gat           | Construction of Godown/ Small Warehouse | 200                    | SHG           | Mixed                   | 2000000.00               | 1192200.00           | SHG members had stored Cotton in Godown on non rental basis. |
| 6       | Shri Sadguru Shetkari Utpadak Gat          | Construction of Godown/ Small Warehouse | 200                    | SHG           | Mixed                   | 2000000.00               | 1196400.00           | SHG members had stored Cotton in Godown on non rental basis. |
| 7       | Shree Sai Shetkari Swayam Sahayata Gat     | Construction of Godown/ Small Warehouse | 200                    | SHG           | Mixed                   | 1995600.00               | 1180200.00           | SHG members had stored Cotton in Godown on non rental basis. |
| 8       | Shri Hanumant Shetkari Utpadak Gat         | Construction of Godown/ Small Warehouse | 200                    | SHG           | Men                     | 3987100.00               | 2391600.00           | SHG members had stored Cotton in Godown on non rental basis. |
| 9       | Sanskar Shetkari Utpadak Gat               | Construction of Godown/ Small Warehouse | 200                    | SHG           | Men                     | 1990200.00               | 1194120.00           | SHG members had stored Cotton in Godown on non rental basis. |
| 10      | Vithai Shetkari Utpadak Gat                | Construction of Godown/ Small Warehouse | 200                    | SHG           | Mixed                   | 1993800.00               | 1185000.00           | SHG members had stored Cotton in Godown on non rental basis. |

### Cropping pattern

During the *Kharif* season, approximately 90% of the village's land was dedicated to cultivating Bt cotton hybrids. Pigeon pea was the second most commonly grown crop in the village, followed by soybean and sorghum. Typically, farmers intercrop Pigeon pea with cotton by planting a single row of Pigeon pea after every 7-9 rows of cotton. Bt cotton hybrids from Private seed companies were popular among farmers and were widely adopted. In the *Rabi*



season, chickpea, wheat, and *Rabi* sorghum were the primary crops cultivated in the village. Due to limited water availability and resources, high-value cash crops were not commonly grown. However, some farmers reported cultivating early varieties of Bt cotton hybrids that allow them to cultivate remunerative crops like chickpea in the *Rabi* season. While high-value crops were not typically cultivated, some vegetable crops were grown on a small scale.

### **Soil type and fertility status**

The village falls within a saline tract and the soil primarily consists of black cotton soil, specifically falling under vertisols, which were medium to deep in depth. According to the Agriculture Assistant, the farmers in Ghusar village have received Soil Health Cards from various sources such as the Department of Agriculture, KVKs, and Dr. PDKV Akola Agriculture University. Upon reviewing one farmer's Soil Health Card, it was observed that the available nitrogen was low, while the available phosphorus ranged from medium to high, and available potassium was high. However, the soil was found to be deficient in micro nutrients such as Sulphur, Zinc, Boron, Iron, Manganese, and Copper. Given that cotton was the major crop grown in the area, farmers were heavily relying on chemical fertilizers like Urea, DAP, and other mixed fertilizers to meet the crop's nutrient demands. Unfortunately, these decisions were often influenced by input shop owners instead of recommendations given by the Agriculture Department or Agriculture University.

### **Management of soil fertility in saline tract**

As discussed, farmers have reported that they use farmyard manure (FYM) every 2-3 years to maintain the soil's fertility. Some farmers also reported growing leguminous crops like soybean, green gram, black gram, and red gram during *Kharif* season and chickpea during *Rabi* season in their cropping pattern. However, some farmers use chemical fertilizers beyond the recommended dose to maximize their crop yield. Farmers were aware of using bio-fertilizers like Rhizobium culture for leguminous crops to improve atmospheric nitrogen fixation capacity in the soil. Application of micronutrients in the recommended dose can considerably increase crop productivity.

In the case of cotton, farmers were generally advised to use 2% DAP or 1% Urea and 1% Magnesium sulphate as a spray solution at the flowering and boll development stage to address nitrogen and phosphorus deficiencies. This has resulted in a reduction of leaf reddening in the cotton crop and an increase in productivity.

Farmers were also aware of soil salinity issues and the use of gypsum for reclamation, but the availability and cost of gypsum were concerns. Drainage was the second most important issue faced by farmers, as the black cotton soils have a high water-holding capacity, and increased

rainfall during the past three years has caused drainage problems. Additionally, farmers face the issue of salt accumulation on the soil surface, which limits heavy irrigation.

To address these issues, farmers should be made aware of growing green manure crops like *Dhaincha* and Sun hemp during the *Kharif* season and burying them in the field after 35-45 days after sowing as an alternative solution for improving the soil's nutrient status and increasing sustainability. Subsurface tillage with the help of a sub-soiler should be recommended to increase soil permeability and reduce surface runoff and nutrient loss. The application of straw mulch has been found to reduce soil surface evaporation and salt concentration in the root zone profile within 30 days from sowing. Farmers should also consider cultivating intercrops such as green gram, cowpea, and cluster bean with cotton crops to improve soil quality. Finally, the application of Zinc sulphate (10-50 kg/ha) depending on the zinc status of the soil should be promoted to counteract salinity.

### **Integrated disease and pest management**

Regarding crop diseases, both *Kharif* and *Rabi* crops have been affected by leaf reddening in cotton, mosaic in soybean, rust and smuts in wheat/sorghum, which have become more prevalent in recent years. Farmers have mostly relied on synthetic fungicides to control these diseases in most crops. However, for chickpea, farmers were advised to use *Rhizobium* and *Trichoderma*, and for wheat and other cereal crops, *Azotobacter* was recommended for seed treatment. The use of these bio-cultures for seed treatment has resulted in a significant decline in wilt, leading to an optimum plant population and a significant increase in crop productivity.

The major pests affecting soybean and other cash crops include the sucking pest complex (aphids, jassids, thrips, and whiteflies), bollworm complex in cotton (American/ Pink/ Spotted bollworms), pod borer, stem borer, leaf-eating caterpillar, and semilooper. Farmers have reported the use of biopesticides such as Neemark (Nimbioli ark/ Neem oil) at appropriate doses to control these pests. This has resulted in reduction in the number of sprays and cost of cultivation compared to the application of synthetic insecticides. Some farmers have also installed pheromone traps at regular intervals to control pod borers in soybean and cotton bollworms in cotton. The use of pheromone traps in cotton has resulted in a significant reduction in the cost of cultivation compared to the application of chemical pesticides like Propenofos/ Cloropyrifos/ Quinolfos at the rate of 20-25 ml per 10 litres of water.

Farmers are advised to implement deep ploughing every three years to expose the soil to high temperatures during summer, as recommended in weekly advisories given to farmers by the Agriculture Department. When asked about crop residue management, most farmers reported collecting crop residue from the fields and burning it to control pathogens and pests, while very few reported using crop residue for composting. The implementation of all these



integrated nutrient management strategies has resulted in effective management of pests and diseases with a significant reduction in the cost of cultivation.

### **Implementation of Micro-irrigation Drip/Sprinkler**

#### **Drip Irrigation**

In village Ghusar, two beneficiaries have installed drip irrigation system. The basic concept of this system was to improve the efficiency of water and fertilizer use, in contrast to traditional practice of flood irrigation. This system was widely adopted by farmers who have access to open wells, bore-wells, lift irrigation, community ponds, or farm ponds.

Farmers in the project area have primarily adopted this practice in cotton crop, and have reported significant increases in yield while achieving high water savings. However, marginal and small farmers have reported that the higher initial investment required for the adoption of this system was a major constraint. Additionally, a lack of technical knowledge about the implementation of drip systems in the field has been reported by farmers, who have urged the project to arrange training sessions to help them in this regard.

#### **Sprinkler irrigation**

The implementation of a sprinkler irrigation system has been observed in the village of Ghusar, where a total of 39 beneficiaries have received one set each. The sprinklers were utilized for providing protective irrigation during prolonged dry spells in the *Kharif* season, as well as supplemental irrigation to *Rabi* crops during critical growth stages, as the water resources available in the area were limited.

The sprinkler irrigation system was being used by farmers in the cultivation of soybean and cotton during prolonged dry spells due to uneven rainfall distribution. The system was portable and can be used in undulating topography, providing additional advantages. However, due to the non-availability of water resources structures and the lack of irrigation water during the *Rabi* and summer seasons, a large number of farmers have not taken the initiative to adopt this irrigation system on their own.

#### **Shade net**

In the village of Ghusar, a farmer named Pramod Janraoji Pagrut has benefited from the PoCRA project by availing himself of a shade net. Previously, the farmer cultivated traditional rainfed cash crops such as cotton and soybean. However, with the introduction of the shade net through the PoCRA project, he has been able to cultivate high-value cash crops such as *Shimla mirch* (Bell Pepper/ *Capsicum*) during the *Kharif* season. This has proven to be very effective in increasing the net income of the farmer, as it was cultivated in a controlled environment with optimum use of available resources.



Figure 137. Shade net unit at village Ghusar

Financial support provided by the PoCRA project for the construction of such units was highly beneficial to farmers, as it creates employment opportunities throughout the year, with crops being cultivated in all three seasons - *Kharif*, *Rabi* and summer. However, one constraint to the adoption of this activity was that small landholding farmers were not able to invest such a high amount initially for a big size shade net unit.

To popularize it further in the village, irrigation resources should be made available with financial assistance. Provision of small-sized shade net units may be made for small/marginal farmers so that they may also benefit from the PoCRA project and earn income throughout the year.

### Implementation of seed production

According to the Cluster Assistant, 92 beneficiaries in Ghusar village have availed the benefits of seed production through the PoCRA project. The farmers in Ghusar village have shown a high adoption of climate-resilient varieties and their seed production, which was being actively supported by officials from the Department of Agriculture. This initiative has set an example for other villages to follow. The farmers in Ghusar village were mostly producing soybean, chickpea, greengram, and blackgram seeds, which were in high demand.



Figure 138. Seed production plot at village Ghusar

Farmers were receiving 10-15% higher rates for their produce by selling seeds instead of selling their produce as raw grain. The use of climate-resilient varieties not only ensures production in changing climatic conditions but also leads to a increase in income for farmers' produce and reduces the cost of cultivation if the produced seeds were used for sowing in the next season.

One farmer, Mr. Sandip Vasudev Gawhale, reported that he was producing seeds on 8 acres of land with four different cultivars of soybean, namely PDKV Amba, Phule Sangam, JS-335, and JS-9560. He further stated that producing seeds of these latest improved varieties has led to a higher net income and he can also use the seeds for

However, some farmers have reported issues with the technical know-how about registering seed plots with Mahabeej (Maharashtra State Seeds Corporation Limited) to avail the benefits

of the seed production activity. This issue can be resolved by providing training through the project. Overall, the seed production activity in Ghusar village has been highly successful and has the potential to benefit many other villages.

### **Storage Godowns**

As reported by Cluster Assistant, five beneficiaries in Ghusar village have taken advantage of support for storage godowns. One of these storage godowns was visited and the beneficiary was the "*Vithai Shetkari Utpadak Gat*" group, established on March 28th, 2022. The godown has dimensions of 30 x 40 feet and has a capacity to store 200 tonnes of farm produce. The project cost was Rs. 20 lakhs, and the group received a subsidy of Rs. 11.85 lakhs under PoCRA, as reported by the founder member of the farmer group. Actual storage was yet to be started in the godown.

Storage facilities were a critical issue faced by farmers. Most farmers in the village lack storage facilities, forcing them to store their produce at home. This lack of scientific storage options means small and marginal farmers have to sell their produce to local traders immediately after harvest, resulting in lower price realization. Additionally, some large farmers with significant land holdings and joint families have requested godown support under the individual beneficiary category.

### **Support for farm implements**

In Ghusar village, a group of 15 farmers have formed an association called "*Gurudev Shetkari Utpadak Gat*". This group has taken advantage of the custom hiring center and purchased various farm implements such as a tractor with cultivator, rotavator, seed drill, BBF planter, cultivator (5 tyne), reversing MB plough, and tractor-mounted sprayer. The project cost for these implements was Rs. 10,15,520/- and the group received a subsidy of Rs. 609372/- through PoCRA, as reported by the founder member of the group.

They share these farm implements with other farmers on a hire basis, and the earnings generated from this were utilized to expand their farming activities in other areas. According to the group, the cost of cultivation has considerably reduced due to the reduction in labor requirements. The timely availability of these farm implements has also led to timely application of cultural operations in the field, resulting in higher productivity.

Additionally, one individual beneficiary named Sh. Jagdish Pagrut has also availed the benefit of a subsidy on the purchase of a tractor with BBF.

### **Benefits gained from the Project**

- Interactions and knowledge sharing among farmers have improved.
- The use of climate-resilient techniques, such as Pheromone Traps, Organic fertilizers, and BBF, has increased, resulting in decreased cultivation costs and increased yield of up to 20-25%.
- Farmers have reduced their use of chemical fertilizers, insecticides, and pesticides by up to 20%.
- The construction of godowns has made storage facilities available for farmers at the village level, enabling them to store their produce safely for longer periods.
- This has reduced the transportation cost of farm produce and allowed farmers to obtain higher prices for their products.
- Farming allied income sources, such as vegetable growing, seed production, CHC, and godowns, have been developed at the village level.
- Self-help groups consisting of women, men, and mixed members have started godown and CHC activities, which are progressing as income-generating activities for the groups and others.
- More activities could be provided to the landless, even though goat rearing was not available, and they are not interested in other activities.
- Area-specific activities should be provided to farmers in saline areas, and more focus should be given to this issue.
- Entrepreneurship development has begun at the village, providing work availability for landless laborers in the village.
- Due to the implementation of the PoCRA project, the social-economic status of the villagers was observed to be improving, thereby improving their livelihoods.

### **Recommendations/Suggestions for Saline Soil management**

1. The use of sub-soiler for sub surface tillage should be promoted to increase soil permeability and reduce surface runoff and nutrient loss in saline tracts.
2. The monocropping of cotton in Ghusar needs to be addressed by adopting proper crop rotation, diversification, and intercropping of legumes with cotton production systems.
3. Furrows in cotton should be opened after 30 days of sowing, after every 2 or 3 rows, to enhance the efficiency of fertilizers and amendments.
4. In saline soils, an extra 20-25% of nitrogen should be added based on soil testing to compensate for the low availability of nitrogen.

5. The addition of organic manures such as FYM and compost should be encouraged as these help in reducing the negative effects of salinity by releasing organic acids during decomposition.
6. The application of Zinc sulphate (10-50 kg depending on soil zinc status) needs to be promoted to counteract salinity and address zinc deficiency in vertisols.

## 8. Case Study: Takli Jalam, Tehsil and District-Akola

Takli Jalam village was identified with low disbursement under PoCRA project in CM-V Survey. The field visit was conducted on 29.09.2022 and officials from Department of Agriculture who accompanied Sh.Ankush Wakode (Agriculture Assistant), Sh.Mukinda Sapkal (Cluster Assistant) and Smt. Renuka Narayan Borele (Krushi Tai).

Takali Jalam village falls in Taluka and District Akola in the Amravati division of Maharashtra, India. According to Census 2011, the total population of Takali Jalam was 511 people, out of which 263 were male and 248 were female. The literacy rate of the village was 66.34%, with 74.52% of males and 57.66% of females being literate. The village consists of around 120 houses. A significant portion of the population (around 111 people) in the village were landless and earn their income from agricultural labor and jobs in the nearby town of Akola.

The total geographical area of the village was 304.41 hectares, out of which 287.0 hectares was under cultivation. Approximately 25.0 hectares of the cultivated land was found to be under protective irrigation, with bore-wells being the main source of water availability.

### Rainfall pattern of Akola district

The normal rainfall distribution pattern of this district was 689.5 mm from South West Monsoon, 80.7 mm from North East monsoon (October -December), 28.7 mm from Winter (Jan-March) and 19.7 mm from Summer (April-May) with annual rainfall of 818.6 mm in 46 rainy days. During *Kharif* 2021, the monsoon rainfall from June to September was 959.8 mm. This excess rainfall against the normal rainfall, was used effectively as protective irrigation to *Kharif* and *Rabi* crops. Rainfall during October-December was 116 mm and the total rainfall was 1075.8 mm, which was higher than total normal rainfall. This rain water has enhanced more area under cultivation in *Rabi* season due to significant amount of ground water recharge.

### Status of applications in village Takli Jalam

- 1) Total registrations: 216
- 2) Total applications: 112
- 3) Pre sanctions: 40

#### 4) Direct Benefit Transfers: 05

### **Agricultural activities implemented in village Takli Jalam**

The following activities under the PoCRA projects have been/are being implemented in this village as reported by Cluster Assistant:

- 1) Sprinkler irrigation: 02
- 2) Power weeder: 01
- 3) Host farmers: 02

### **Cropping pattern**

During the *Kharif* season, approximately 70% of the area in the village was used for Soybean cultivation, while about 20% was used for Cotton (Bt cotton hybrids) cultivation. Pigeon pea was the second-largest crop grown in the village, intercropped with Soybean in a row proportion of Soybean + Pigeon pea (6:1)/(5:1). Green gram, Black gram, and Sorghum were cultivated in smaller proportions.

In the *Rabi* season, Chickpea, Wheat, and *Rabi* Sorghum were the major crops cultivated in the village. The cropping sequence of Soybean followed by Chickpea was widely adopted in the village and was the most profitable cropping system, according to farmers. Due to the lack of water availability and resources, high-value cash crops were not cultivated. However, vegetable crops were grown in smaller proportions and sold in the nearby town.

### **Soil type and fertility status**

The soils of village Takli Jalam primarily consist of black cotton soils falling under the vertisols group. These soils have a medium to deep depth. The farmers in this village had been provided with soil health cards by the Department of Agriculture, KVK's, and Dr. PDKV, Akola Agriculture University, as reported by the Agriculture Assistant.

These soils were low in available nitrogen, medium to high in available phosphorus, and high in available potassium. In terms of micro-nutrients, the soils were deficient in Sulphur, Zinc, Boron, Iron, Manganese, and Copper. The major crop grown in the area was Soybean, and hence, farmers extensively use chemical fertilizers such as neem coated Urea, DAP, and other mix fertilizers to fulfill the nutrient requirements.

### **Management of soil fertility**

According to the farmers, they use FYM to maintain soil fertility status every 2-3 years. During the *Kharif* season, most farmers reported growing leguminous crops such as soybean, green gram, black gram, and red gram, followed by chickpea in the *Rabi* season. The farmers were aware of the benefits of using bio-fertilizers such as Rhizobium culture for leguminous crops,



which can enhance atmospheric nitrogen fixation capacity in the soil. The application of micronutrients in the recommended dose can enhance crop productivity. In the case of soybean, where the crop was facing nitrogen and phosphorus deficiency, farmers were advised to use a foliar spray of 19:19:19 water-soluble fertilizer (NPK) at the flowering stage and 00:52:34 water-soluble fertilizer during pod development, as reported by the Cluster Assistant. This practice has resulted in higher crop productivity.

## Implementation of Micro-irrigation

### Sprinkler irrigation

This activity had been implemented in Takli Jalam village, where two beneficiaries received a set of Sprinkler irrigation. During a visit to one of the beneficiaries, Mr. Rannu Lallu Beniwalu, who availed the subsidy on sprinkler set through PoCRA, reported that previously he was unable to apply any protective irrigation to crops during prolonged dry spells in *Kharif* season and was not able to cultivate any crop in *Rabi* season due to lack of irrigation facilities.



Figure 139. Sprinkler set unit at village Takli Jalam

### Subsidy on farm implements

A visit was conducted to the field of Sh. Ramzan Idu Beniwal in Takli Jalam village, who had availed the benefit of a Power Weeder from the PoCRA project. The Power Weeder, costing Rs. 1,20,000/-, had a subsidy component of Rs. 60,000/- for the farmers. Power weeders were farm implements utilized for eliminating weeds, undesirable plants, and grass. They were also called cultivators, comprising of customized prongs or plates to work between crop columns. The power weeders mix the soil and break the blocks. The prongs fitted on the casing of the power weeder/cultivator brush the soil profoundly in the field.



Figure 140: Power weeder unit at Village Takli Jalam

The farmers reported that with the help of the power weeder, they were able to cultivate vegetable crops, floriculture crops (marigold, rose, chrysanthemum, etc.) in the field which were highly remunerative, and plan to harvest the yield of these flowers during the peak festive seasons. They further stated that because of the power weeder, they were not relying on laborers to carry out intercultural operations, especially in vegetable and flower crops, and their income round the year had considerably increased as compared to growing traditional cash crops only.

Regarding the benefits of using a power weeder over conventional cultivation, power weeders assist farmers in saving time and money by reducing the hard work and covering more land in a brief time frame. Power weeders were designed to be compact, lightweight, and multi-functional to make cultivating easier and more effective for small landholding farmers. Lightweight and smaller power weeders allow farmers to easily transport the weeders to their fields and perform various interculture operations with ease, making cultivating simple and accessible for farmers. However, the only constraint in adopting the power weeder was the initial higher investment, which small and marginal farmers were not able to bear.

### Recommendations/Suggestions

1. The electricity supply in both villages was highly irregular, which was forcing farmers to irrigate their crops during the night, as there was no power available during the day. Therefore, it was recommended that provisions be made for solar-operated pumps under a project aimed at effectively utilizing sprinkler and drip irrigation systems, as well as electric fencing to address the issue of protection from wild animals.
2. The size of the shade net should be minimized so that small and marginal farmers can also afford to participate in this activity with a minimal initial investment.



3. Collaboration with Mahabeej should be facilitated to provide training on seed production techniques and registration of seed plots, in order to encourage a greater number of farmers to participate in this activity.
4. Improved composting methods should be demonstrated to enable effective utilization of farm waste and ensure sustainable soil health.

### Observations for low DBT at village Takli Jalamb

- About 70-80% of farmers belongs to marginal and small land holding category facing low productivity and income find it difficult to manage high initial investment on their own for the implementation of project activities. Most of the project activities require high initial investment for e.g. Drip, PVC/HDPE pipes, Sprinklers, Farm machineries, Farm ponds, Poly house, Shade nets, Horticulture plantation.
- Out of total population of 511 in the village a major portion around 111 i.e. about 22.2 percent population in the village was found to be landless and activities for landless in project are on hold. Limited scope for landless people to apply for activities.
- Lack of irrigation resources was also the major constraint because of which farmers are unable to apply for the activities such as drip, sprinkler etc.
- During discussion it was observed that farmers are not aware about the different components covered under the project rather than drip and sprinkler. Awareness about all the components of the project needs to be created so that farmers can come forward to avail the benefits.
- Implementation of parallel central and state government schemes availing similar benefits under the PoCRA project for e.g. Maha DBT, *Magel Tyala Shetatale*, *Bhausaheb Phundkar Falbaag Yojana*, *Unnat Sheti Samrudha Shetkari* etc.
- No provision for livestock rearing under the project especially for dairy and allied activities, which are very much popular among the farmers of this village as this village was very near from district headquarter.
- During discussions some of the farmers reported the delay in disbursement of subsidies which has created a sort of non-preference among the farmers to apply for the project activities which are associated with complexities of documentation and application procurement procedures resisting farmers to apply.

## 9. Insights from PoCRA MIS Data

### 1.1. DBT MIS Data

#### Registrations

##### Registration Status

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

The number of farmers registered under PoCRA Project is given in the table below. As per the project MIS Data, the registration started in November 2018 and until 31 March 2022, a total of 4,87,422 beneficiaries have registered under the project in the Rest of Project Area (Akola, Amravati, Buldhana, Jalgaon, Wardha, Washim and Yavatmal districts). The highest number of registrations were made in the Apr 21 – Sep 21 (about 22%), followed by Oct 21 – Mar 22 (19%) and Oct 20 – Mar 21 (18%).

*Table 19: Registrations in Rest of Project Area*

| Time Period            | Registrations   |             |
|------------------------|-----------------|-------------|
|                        | Number          | Percentage  |
| <b>Nov 18 - Mar 19</b> | 32,163          | 7%          |
| <b>Apr 19 - Sep 19</b> | 72,942          | 15%         |
| <b>Oct 19 - Mar 20</b> | 58,997          | 12%         |
| <b>Apr 20 - Sep 20</b> | 35,625          | 7%          |
| <b>Oct 20 - Mar 21</b> | 87,479          | 18%         |
| <b>Apr 21 – Sep 21</b> | 1,07,286        | 22%         |
| <b>Oct 21 – Mar 22</b> | 92,930          | 19%         |
| <b>Total</b>           | <b>4,87,422</b> | <b>100%</b> |

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 (23%), Amravati (18%) Jalgaon (17%), Yavatmal (8%) and Washim (7%) followed this. Wardha showed the least number of registrations to only 2%.

Table 20: Total Registrations

| District                   | Akola  | Amravati | Buldhana | Jalgaon | Wardha | Washim | Yavatmal | Total  |
|----------------------------|--------|----------|----------|---------|--------|--------|----------|--------|
| <b>Registrations (No.)</b> | 113264 | 88233    | 116593   | 84069   | 11517  | 33504  | 40242    | 487422 |
| <b>Registrations (%)</b>   | 23%    | 18%      | 24%      | 17%     | 2%     | 7%     | 8%       | 100%   |

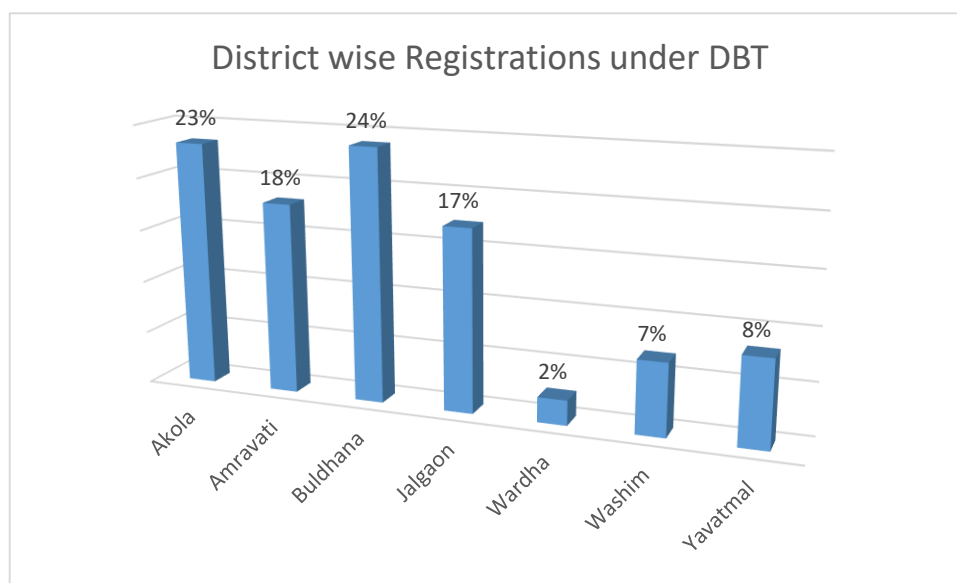


Figure 141: District wise Registrations under DBT

## Applications

### Application Status

Of the total 4,87,422 individuals registered up to March 2022, as many as 3,42,304 individuals (or 70%) applied for one or more benefits until March 2022.

District-wise number of active applications submitted by registered individuals is given below in table. As in the case of number of registrations, Jalgaon (32%) and Buldhana (22%) districts showed the highest number of applications for benefits under the project and in the other districts, it was 12 to 11% except in Wardha district where it was just 3% only.

Table 21: District wise Active Applications (till 31.03.2022)

| District     | Applications  | Percent     |
|--------------|---------------|-------------|
| Akola        | 36742         | 11%         |
| Amravati     | 30157         | 9%          |
| Buldhana     | 76064         | 22%         |
| Jalgaon      | 109471        | 32%         |
| Wardha       | 11960         | 3%          |
| Washim       | 37377         | 11%         |
| Yavatmal     | 40533         | 12%         |
| <b>Total</b> | <b>342304</b> | <b>100%</b> |

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

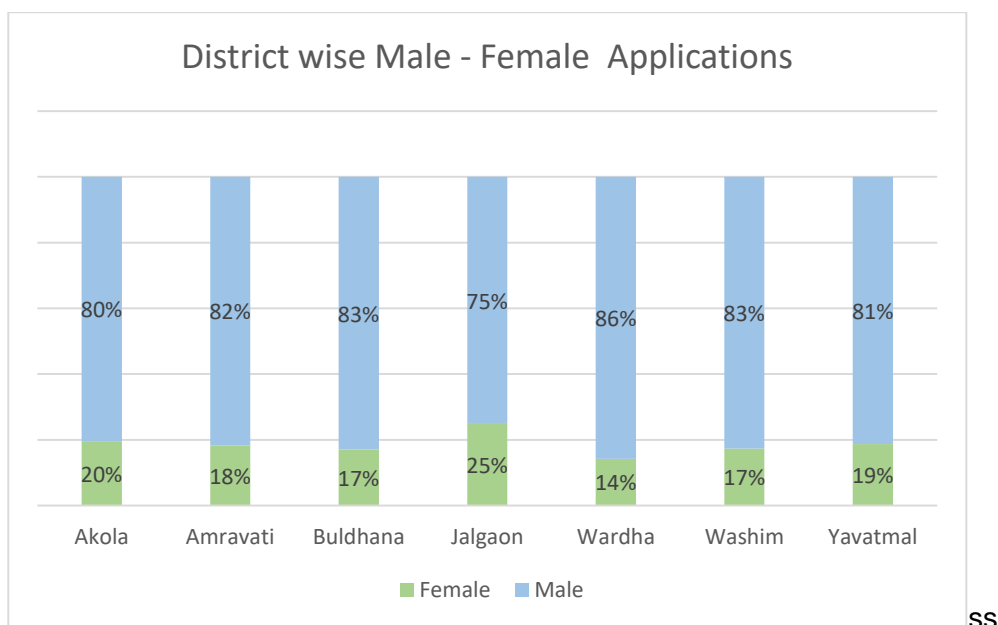


Figure 142: District wise Male – Female Applications

Out of total 68,586 female applications, social category wise applications were General (93%), Schedule case (4%), Schedule tribes (3%). Similarly, total 2,73,718 male applications were General (92%), Schedule case (5%), Schedule tribes (3%).

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

## Disbursements

### Disbursement Status

Out of 3,42,304 applications, disbursements have been made to 1,25,152 applications constituting 36.5% of the total applications. Total amount disbursed was Rs. 50,268.27 Lakhs. The highest amount had been disbursed to Jalgaon (Rs. 28326.84 lakh) followed by Buldhana (Rs. 9279.13 lakh) and lowest disbursed district was Wardha (Rs. 843.87 lakh). The total individual disbursed beneficiaries of rest of the project area was 91,671 out of which 79% are male and 21% female. The proportion of disbursement of male and female beneficiaries in overall districts, was lowest in the districts of Wardha (M-2%, F-3%), Washim (M-6%, F-8%) and the highest disbursement was in Jalgaon (M-45%, F-35%) followed by Buldhana (M-16%, F-20%). The data suggests that there was a gender disparity in disbursement of benefits with more male beneficiaries receiving disbursements than females in most districts.

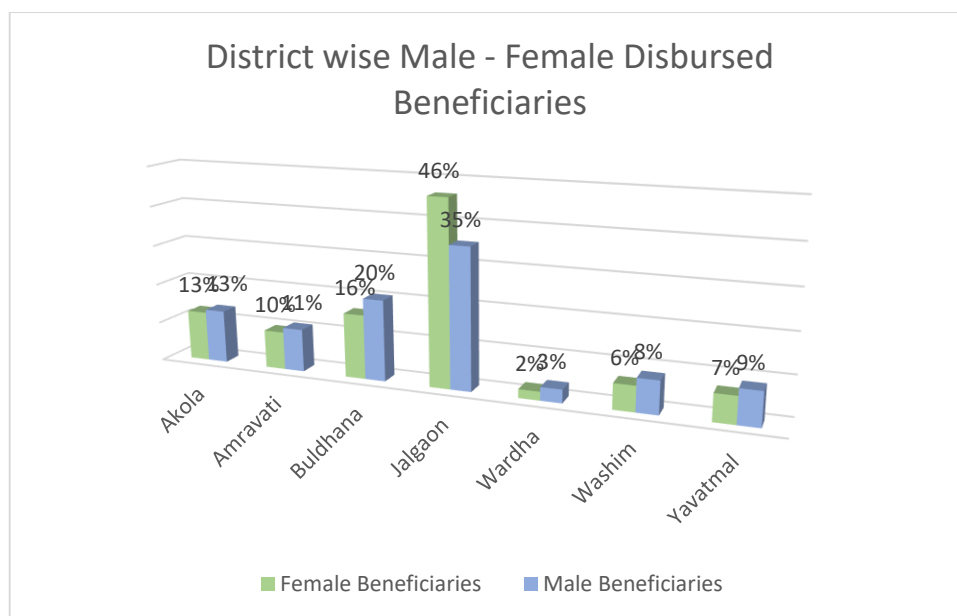


Figure 143: District wise male – female disbursed beneficiaries

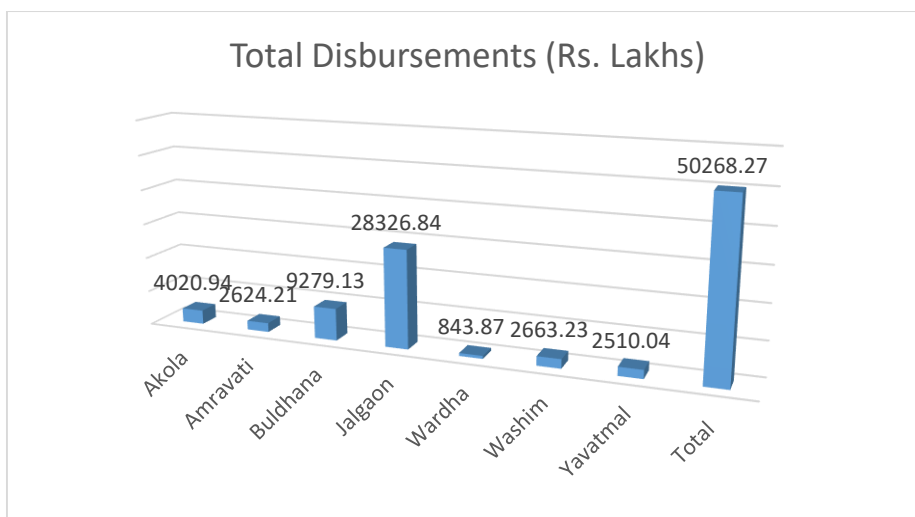


Figure 144: Total Disbursements

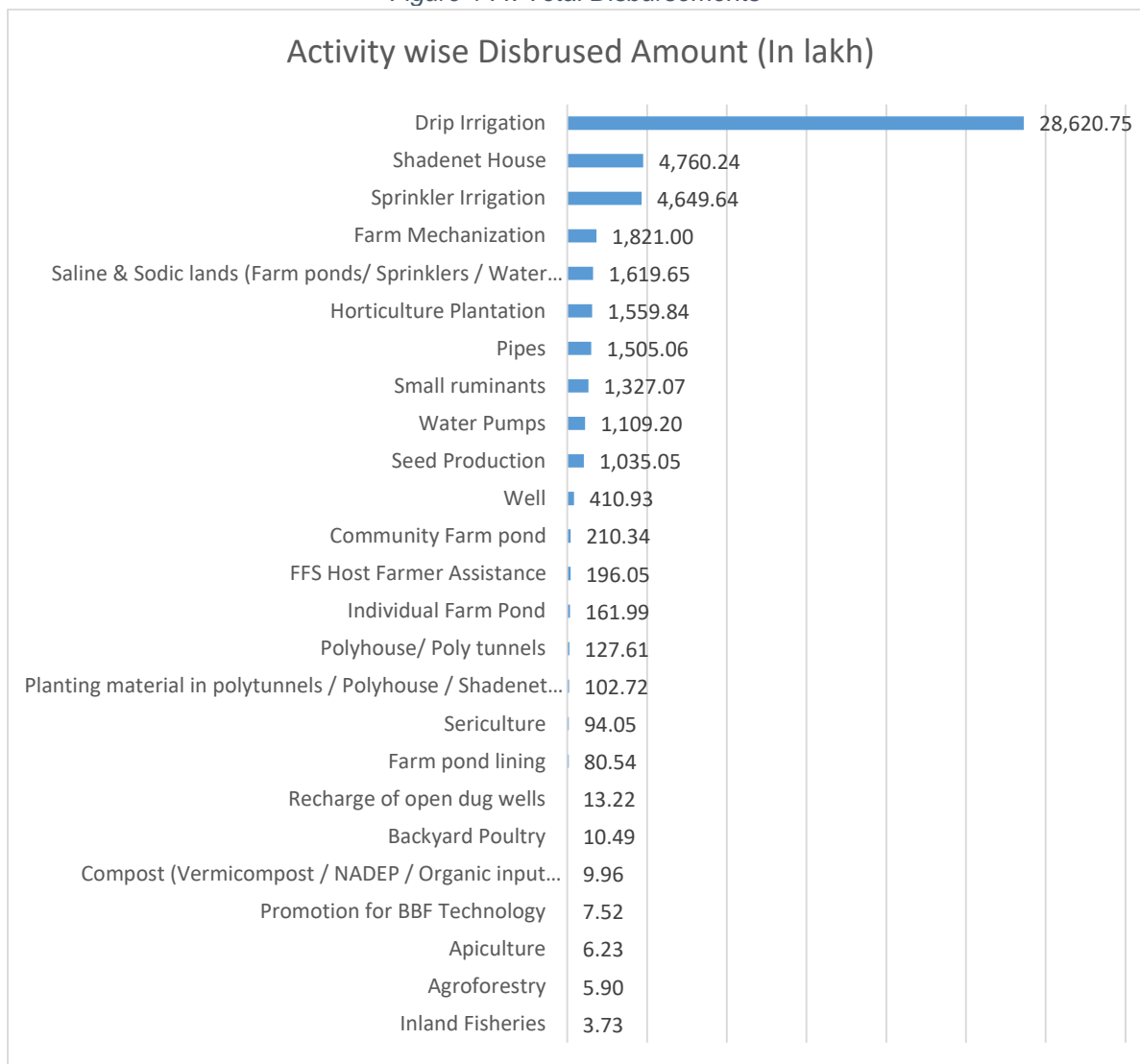
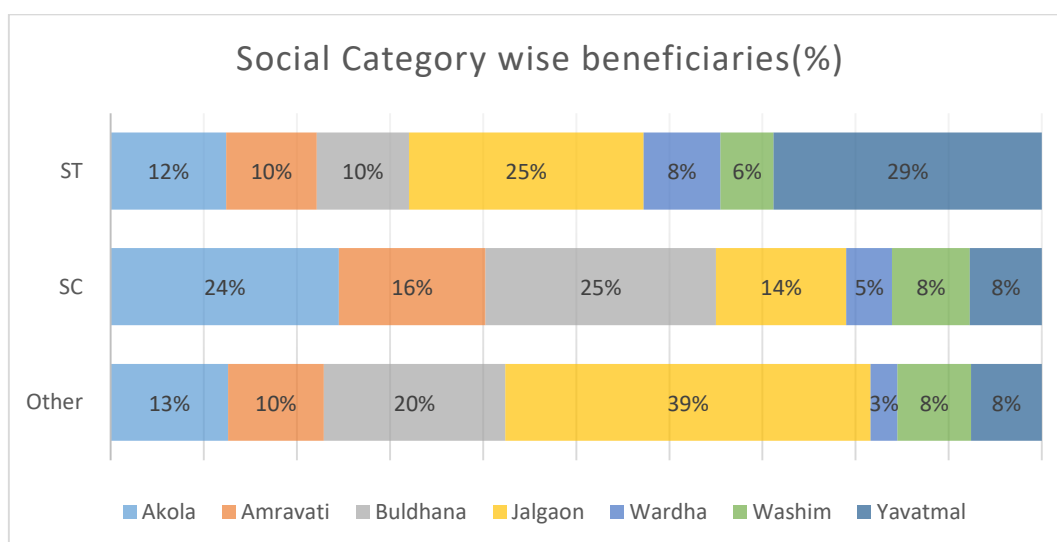


Figure 145: Total Disbursements

Activity wise disbursement status is presented in the Figure no. 129. Around V7.88% of the amount had been disbursed for Drip Irrigation (Rs. 28620.75 Lakhs), followed by Shade-net 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%.

### **Social Category - wise Status**

Out of the total applicant's disbursements, 5% were from Schedule Caste (SC) and 3% were from Schedule Tribe (ST) and the remaining 92% from other social categories. The proportion of social category beneficiaries in rest of project area, ST was highest in Yavatmal (29%) and Jalgaon (25%). SC was highest in Buldhana (25%) and Akola (24%). Similarly, other social category was highest in Jalgaon (39%), followed by Buldhana (20%) and Akola (13%) and lowest in Wardha (3%) only.



*Figure 146: Social Category wise beneficiaries*

## 1.2. Village Profile at a glance

Table 22: Village Profile for CM-V

| S No | District | Taluk         | Village      | Cencode | Cluster code  | Registration | Applications | Pre sanction | Disbursed applications | Beneficiary farmers |
|------|----------|---------------|--------------|---------|---------------|--------------|--------------|--------------|------------------------|---------------------|
| 1    | Akola    | Akola         | Takali Jalam | 530008  | 501_ptr-2_04  | 216          | 102          | 10           | 5                      | 5                   |
| 2    | Akola    | Akola         | Bahirkhed    | 530059  | 501_pt-19_02  | 123          | 86           | 45           | 28                     | 18                  |
| 3    | Akola    | Akot          | Rohankhed    | 529830  | 501_ptsp-1_04 | 203          | 79           | 8            | 7                      | 7                   |
| 4    | Akola    | Barshitalki   | Mirzapur     | 530496  | 501_ptr-4_02  | 72           | 97           | 58           | 35                     | 27                  |
| 5    | Akola    | Murtizapur    | Shelu Najik  | 530189  | 501_pt-20_01  | 214          | 124          | 24           | 16                     | 16                  |
| 6    | Akola    | Patur         | Belura Kh.   | 530390  | 501_ptmn-3_03 | 344          | 379          | 91           | 33                     | 28                  |
| 7    | Akola    | Telhara       | Khakata      | 529691  | 501_pt-7_07   | 163          | 77           | 31           | 11                     | 9                   |
| 8    | Amravati | Anjangaon     | Sarfabad     | 531845  | 503_ptc-1_06  | 89           | 32           | 10           | 7                      | 5                   |
| 9    | Amravati | Bhatkuli      | Narayanpur   | 532847  | 503_ptb-4_03  | 45           | 18           | 6            | 5                      | 3                   |
| 10   | Amravati | Chikhaldara   | Koylari      | 531646  | 503_te-1a_02  | 202          | 265          | 20           | 8                      | 8                   |
| 11   | Amravati | Daryapur      | Shivarkheda  | 532954  | 503_ptc-1_04  | 62           | 36           | 14           | 10                     | 8                   |
| 12   | Amravati | Dhamangaon    | Jalgaon      | 533290  | 503_wr-7_01   | 270          | 255          | 115          | 86                     | 64                  |
| 13   | Buldhana | Chikhli       | Yewata       | 529197  | 500_gp-32a_01 | 620          | 1909         | 619          | 425                    | 278                 |
| 14   | Buldhana | Jalgaon Jamod | Sawargaon    | 528220  | 500_pt-14_06  | 255          | 260          | 96           | 41                     | 29                  |
| 15   | Buldhana | Lonar         | Kaulkhed     | 529581  | 500_pg-6_02   | 104          | 231          | 69           | 51                     | 44                  |
| 16   | Buldhana | Malkapur      | Kalegaon     | 528582  | 500_ptv-2_02  | 88           | 166          | 58           | 20                     | 15                  |



|                                              |          |             |                          |        |               |      |      |     |     |     |
|----------------------------------------------|----------|-------------|--------------------------|--------|---------------|------|------|-----|-----|-----|
| 17                                           | Buldhana | Nandura     | Alampur                  | 528501 | 500_pt-16_02  | 292  | 313  | 42  | 26  | 22  |
| 18                                           | Buldhana | Sangrampur  | Ladnapur                 | 528312 | 500_pt-10_02  | 779  | 1649 | 472 | 150 | 127 |
| 19                                           | Buldhana | Shegaon     | Gavhan                   | 528467 | 500_ptmb-1_02 | 292  | 261  | 114 | 76  | 50  |
| 20                                           | Jalgaon  | Bhadgaon    | Shindi                   | 527669 | 499_te-33_01  | 339  | 647  | 380 | 100 | 83  |
| 21                                           | Jalgaon  | Chalisgaon  | Ozar                     | 527792 | 499_te-35_01  | 133  | 215  | 140 | 93  | 78  |
| 22                                           | Jalgaon  | Erandol     | Adgaon                   | 527300 | 499_te-27_03  | 1017 | 2636 | 811 | 235 | 178 |
| 23                                           | Jalgaon  | Jamner      | Pat Khede                | 528023 | 499_te-5c_04  | 206  | 356  | 139 | 56  | 54  |
| 24                                           | Jalgaon  | Muktainagar | Kothali                  | 527027 | 499_pt-13_01  | 172  | 228  | 142 | 84  | 72  |
| 25                                           | Jalgaon  | Raver       | Raipur                   | 526932 | 499_te-7_04   | 202  | 284  | 81  | 10  | 10  |
| 26                                           | Wardha   | Deoli       | Bopapur                  | 534304 | 504_wr-25_04  | 42   | 27   | 12  | 8   | 6   |
| 27                                           | Washim   | Karanja     | Kisan Nagar              | 530981 | 502_ptkp-1_03 | 82   | 137  | 51  | 17  | 14  |
| 28                                           | Washim   | Manora      | Amdari                   | 531137 | 502_pgaa-3_02 | 71   | 92   | 26  | 11  | 11  |
| 29                                           | Washim   | Washim      | Malegaon N.<br>Bhat Umra | 531208 | 502_pga-1_01  | 251  | 292  | 67  | 43  | 34  |
| 30                                           | Yevatmal | Kelapur     | Pimpari Road             | 543477 | 510_pgk-5_03  | 219  | 274  | 94  | 51  | 38  |
| 31                                           | Yevatmal | Yavtmal     | Sawargad                 | 542431 | 510_pgw-1_01  | 167  | 423  | 106 | 27  | 24  |
| 32                                           | Yevatmal | Ralegaon    | Bhimsenpur               | 543661 | 510_pgk-1_03  | 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  |

### 1.3. FFS MIS Data

#### Total Number of FFS Conducted

As per the MIS data, a total number of 15058 FFS were conducted till *Rabi* 2021-22. 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 (23%), followed by Akola (21%) and Buldhana (18%). Yavatmal (14%), Jalgaon reported 13% and Washim (6%) and Wardha (5%) reported the least number of FFS conducted. Also the pattern was similar as per the table below.

Table 23: 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 | 435      | 477      | 444     | 326    | 105    | 190      | 374   | 2351 |
|            |         | Rabi   | 301      | 247      | 275     | 257    | 52     | 101      | 151   | 1384 |
|            |         | Total  | 736      | 724      | 719     | 583    | 157    | 291      | 525   | 3735 |
| Total      |         | 3094   | 3477     | 2737     | 2017    | 680    | 952    | 2101     | 15058 |      |
| Percentage |         | 21%    | 23%      | 18%      | 13%     | 5%     | 6%     | 14%      |       |      |

For *Kharif* season, crop wise data showed highest number of FFS conducted for Cotton (53.56%) followed by Soybean (41.32%) and Pigeon Pea (Tur) (2.80%). FFS for rest of the crops were less than 2% as per the table below.

Table 24: Crop wise FFS Conducted in Kharif Season

| Crop Name        | Kharif 2019-20 | Kharif 2020-21 | Kharif 2021-22 | Total FFS   | Percentage |
|------------------|----------------|----------------|----------------|-------------|------------|
| Cotton           | 1728           | 1903           | 1297           | 4928        | 53.56%     |
| Soybean          | 1399           | 1422           | 981            | 3802        | 41.32%     |
| Pigeon pea (Tur) | 88             | 82             | 88             | 258         | 2.80%      |
| Maize            | 99             | 31             | 23             | 153         | 1.66%      |
| Others           | 32             | 16             | 12             | 60          | 0.65%      |
| <b>Total</b>     | <b>3346</b>    | <b>3454</b>    | <b>2401</b>    | <b>9201</b> | -          |

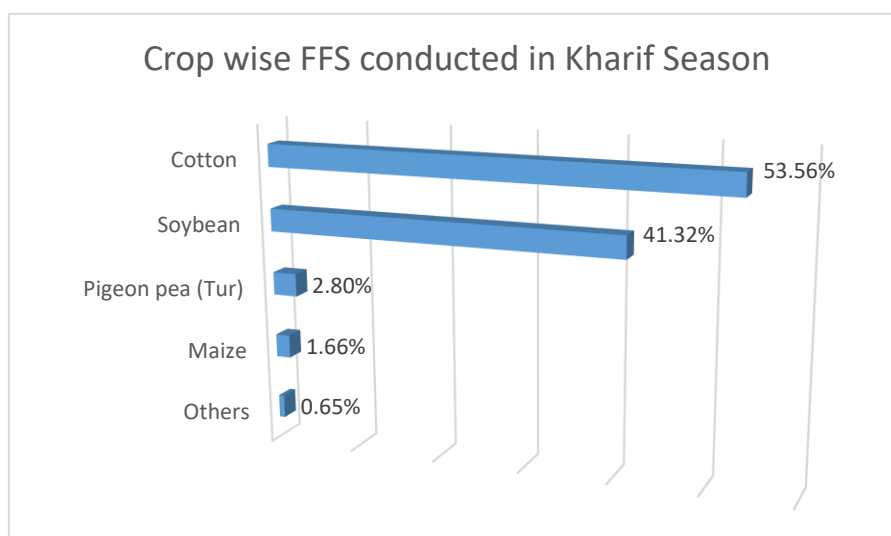


Figure 147: Crop wise FFS Conducted in Kharif Season

For Rabi season, crop wise data showed highest number of FFS conducted for Gram (95.87%) followed by Rabi Jowar (2.74%) and Vegetables (0.85%). FFS for rest of the crops were less than 0.5% as per the table below.

Table 25: Crop wise FFS Conducted for Rabi Season

| Crop Name    | Rabi 2019-20 | Rabi 2020-21 | Rabi 2021-22 | Total       | Percentage |
|--------------|--------------|--------------|--------------|-------------|------------|
| Gram         | 1443         | 1400         | 1317         | 4160        | 95.87%     |
| Rabi Jowar   | 32           | 39           | 48           | 119         | 2.74%      |
| Vegetables   | 22           | 5            | 10           | 37          | 0.85%      |
| Fodder Crop  | 9            | 0            | 5            | 14          | 0.32%      |
| Wheat        | 4            | 1            | 4            | 9           | 0.21%      |
| <b>Total</b> | <b>1510</b>  | <b>1445</b>  | <b>1384</b>  | <b>4339</b> |            |

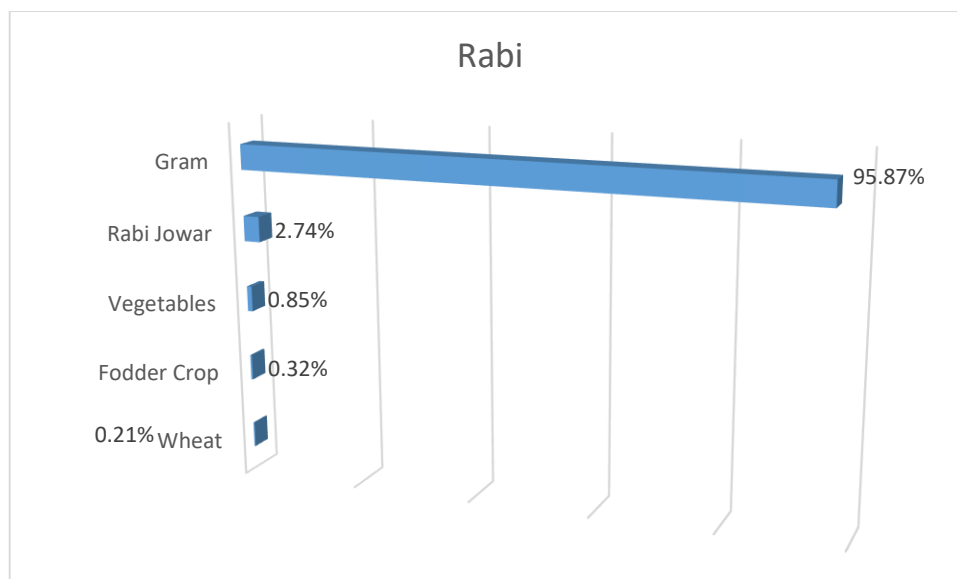


Figure 148: Crop wise FFS Conducted in Rabi Season

### Yield Reported for FFS Plots

Yield data obtained for FFS plots for 2019, 2020, 2021 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.

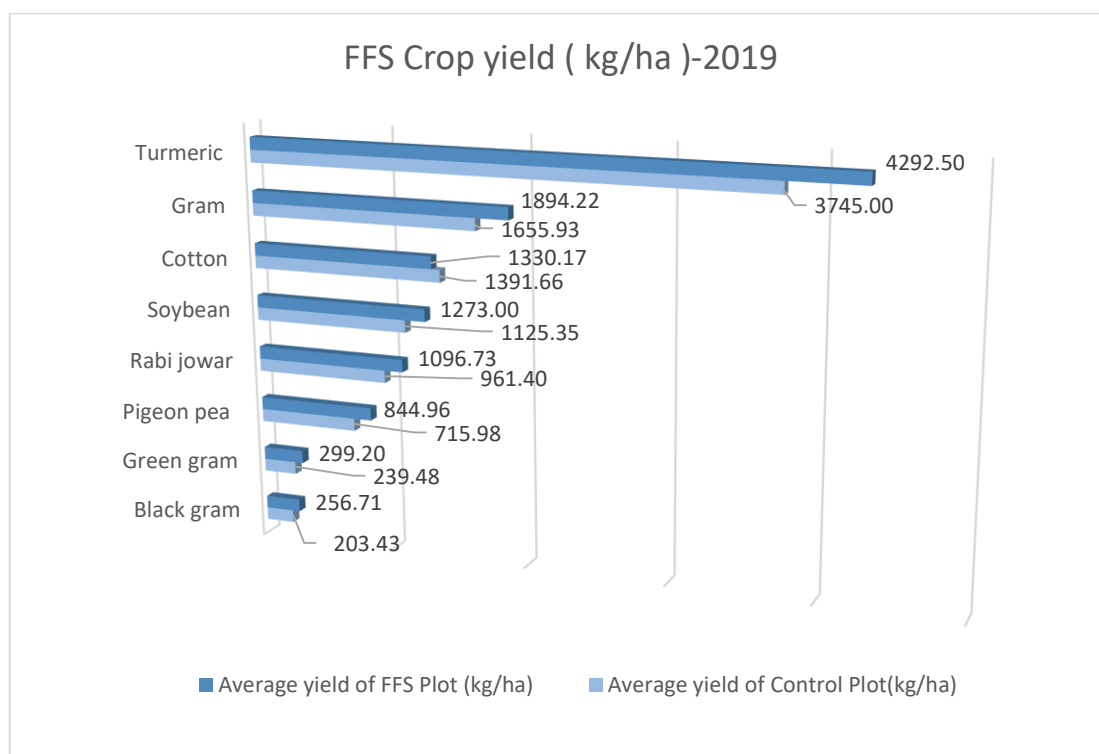


Figure 149: FFS Crop Yield (kg/ha)- 2019

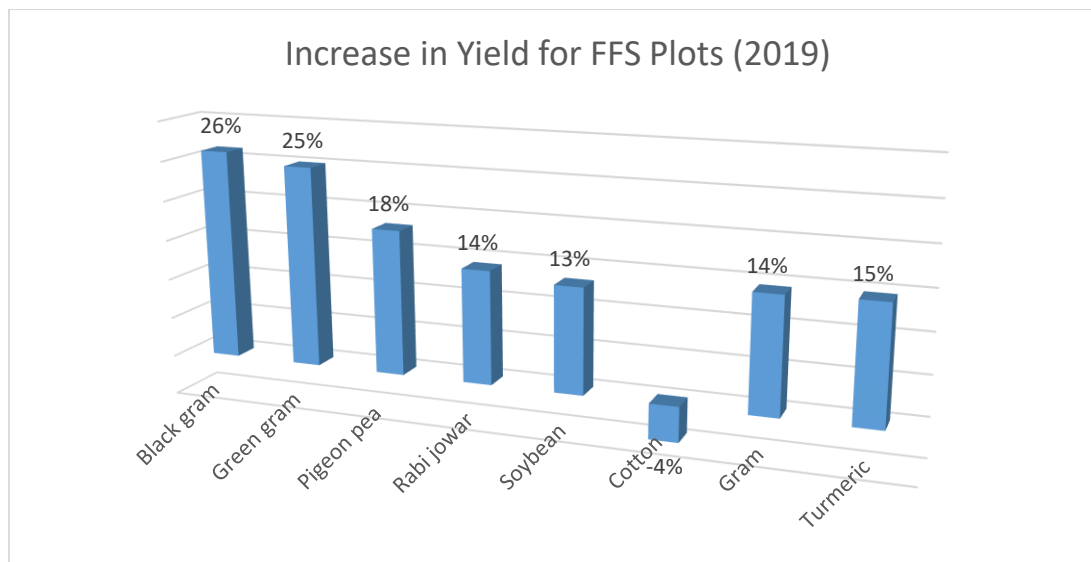


Figure 150: Increase in Yield for FFS Plots (2019)

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.

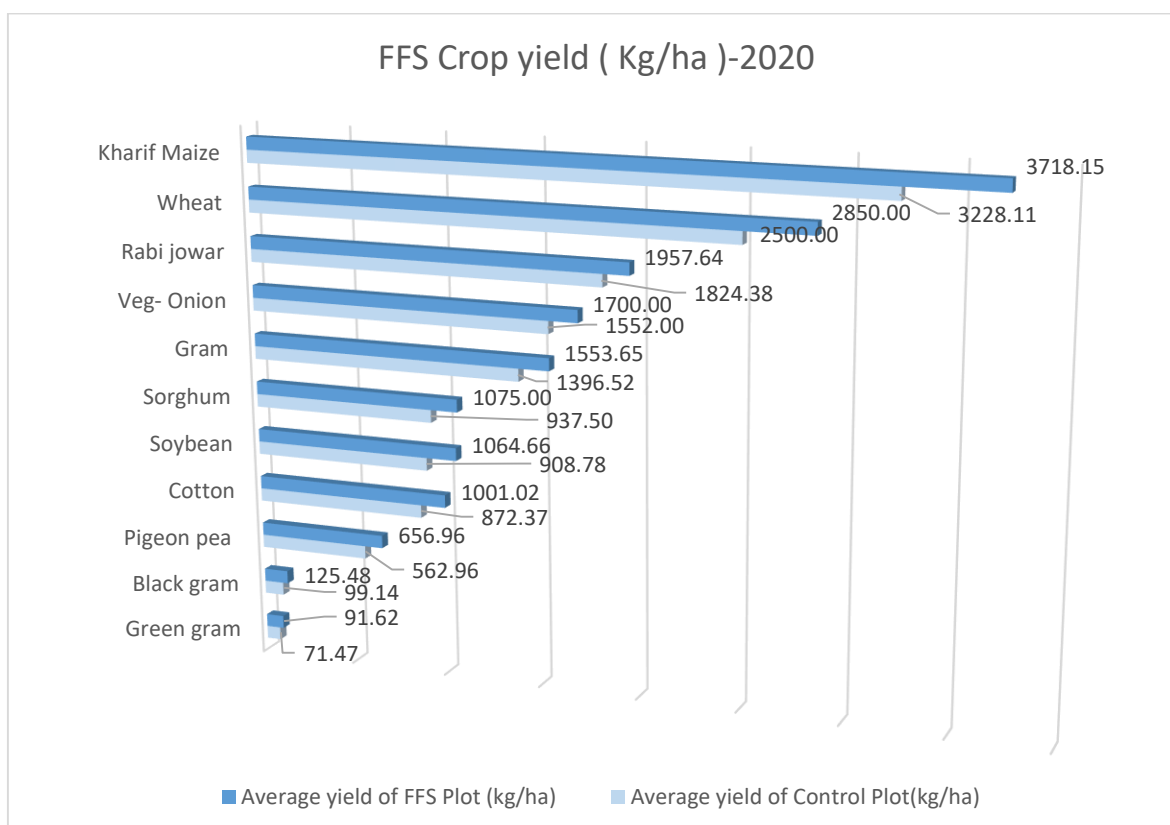


Figure 151: FFS Crop Yield (Kg/ha)-2020

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.

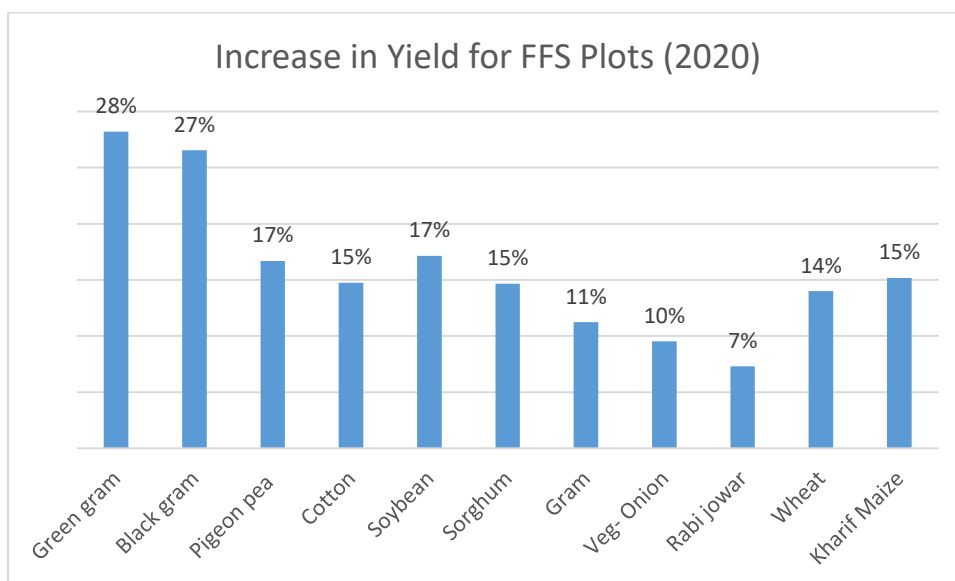


Figure 152: Increase in Yield for FFS Plots-2020

For 2021-22 *Kharif* and *Rabi* season Yield reported of FFS plots and Control plots. It was observed that data of overall crops FFS plots yield reported higher than Control plots. The average FFS plots the yield of Cotton was 509.47 kg/ha. and Soybean was 1524.70 kg/ha.

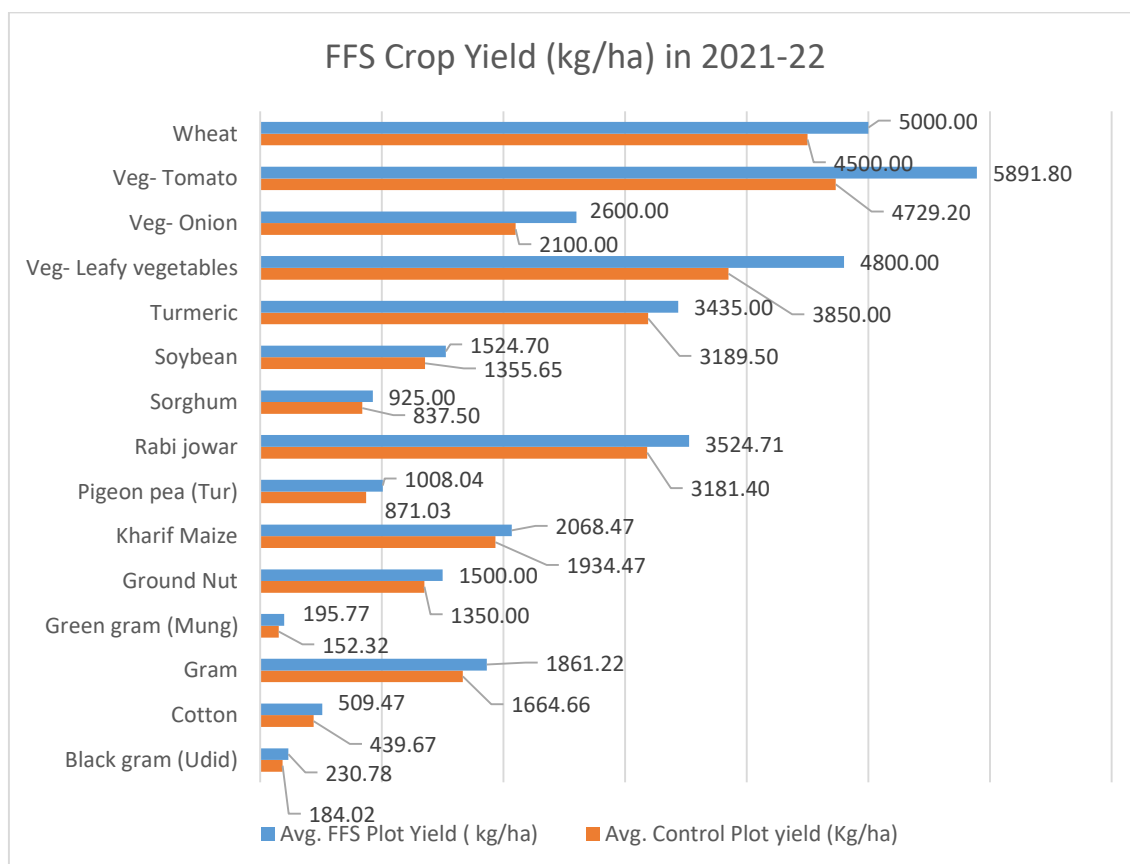


Figure 153: FFS Crops Yield (kg/ ha) in year 2021

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.

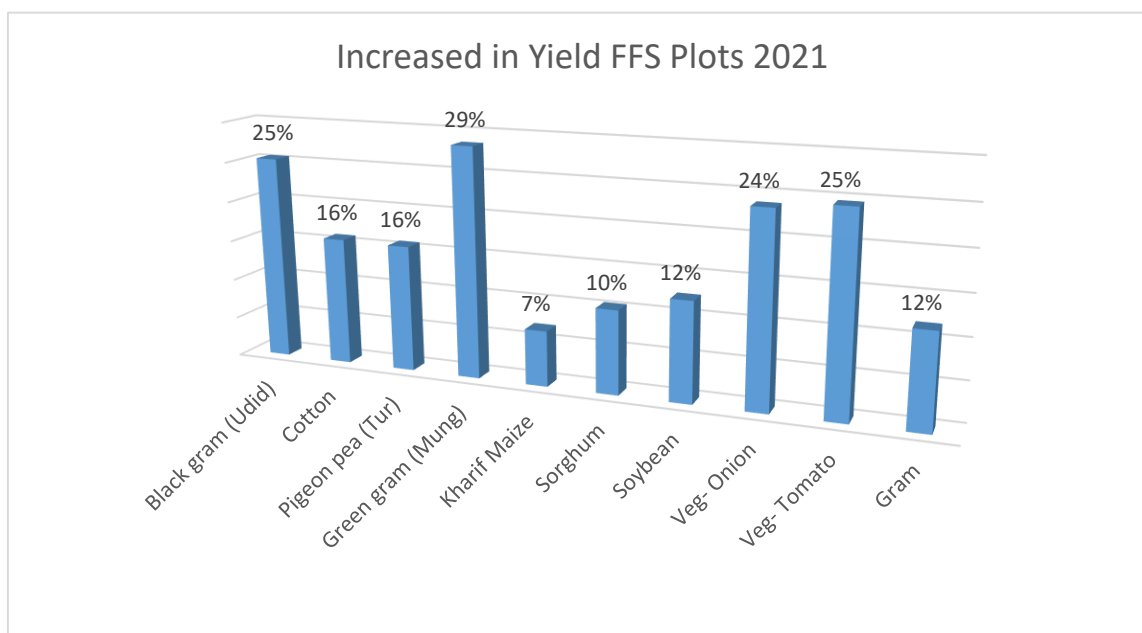


Figure 154: Increased in yield for FFS plots 2021

### 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.

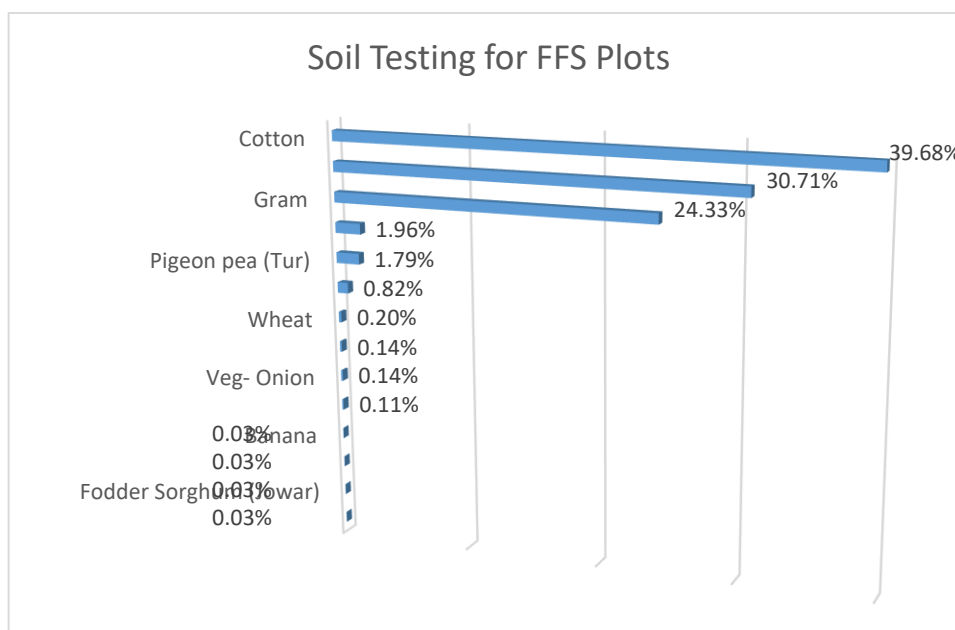


Figure 155: Soil Testing for FFS Plots

## Seed Production of Climate Resilient Varieties

Seed production details of climate resilient variety season wise from 2018 to 2020 is shown in the table below.

Table 26: Seed Production of Climate Resilient Varieties

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



|                      |                                                                                |             |       |
|----------------------|--------------------------------------------------------------------------------|-------------|-------|
| <b>Green Gram</b>    | BM-2003-02, BM-2003-2, MAUS-158, MAUS-71, PKV-AKM-4PKVM-8802, UTKARSHA         | 169         | 8.6%  |
| <b>HY. COTTON</b>    | BN-1 BT                                                                        | 4           | 0.2%  |
| <b>JUTE</b>          | JRO-524                                                                        | 34          | 1.7%  |
| <b>LITTLE MILLET</b> | Phule Ekadashi                                                                 | 1           | 0.1%  |
| <b>Pigeon Pea</b>    | BDN-716, BMSR-736, ICP-8863, ICPL-87119, PKV TARA                              | 144         | 7.3%  |
| <b>Soybean</b>       | JS-2029, JS-335, JS-9305JS-93-05, MAC-S1188, MAUS -71,MAUS-158,MAUS-162,NRC-86 | 1382        | 70.3% |
| <b>TIL</b>           | JLT-408                                                                        | 6           | 0.3%  |
| <b>Total</b>         |                                                                                | <b>1966</b> |       |

#### ***Rabi 2019-20***

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

#### ***Kharif 2020 -21***

|                   |                                         |     |       |
|-------------------|-----------------------------------------|-----|-------|
| <b>Black Gram</b> | AKU-10-01, AKU-15, TAI-1                | 425 | 11.6% |
| <b>COTTON</b>     | AKA-5, AKA-7, RAJAT-BT                  | 7   | 0.2%  |
| <b>Green Gram</b> | AKM-8802, BM-2003-02, PKVM-4, Utakarsha | 481 | 13.1% |
| <b>HY COTTON</b>  | AC-738 BT, BN-1 BT                      | 4   | 0.1%  |
| <b>IMP COTTON</b> | AKA-5, RAJAT BT                         | 25  | 0.7%  |
| <b>Jute</b>       | JRO-524                                 | 185 | 5.0%  |

|                   |                                                                                           |             |       |
|-------------------|-------------------------------------------------------------------------------------------|-------------|-------|
| <b>Pigeon Pea</b> | BDN 716, , BSMR 736, ICP8863, ICPL 87119, MPV-106, P. RAJESHWARI, PKV Tara                | 262         | 7.1%  |
| <b>Soybean</b>    | JS-2029, JS-335, JS-9305,JS-93-05, MACS-1188, MAUS 158, MAUS -71,MAUS-162,MAUS-612,NRC-86 | 2256        | 61.4% |
| <b>Til</b>        | JLT-408                                                                                   | 28          | 0.8%  |
| <b>Total</b>      |                                                                                           | <b>3673</b> |       |

#### Rabi 20-21

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

#### Kharif 2021-22

#### Percentage

|                    |                                                                                        |     |       |
|--------------------|----------------------------------------------------------------------------------------|-----|-------|
| <b>BAJARA</b>      | ABPC-4-3                                                                               | 1   | 0.04% |
| <b>BHENDI</b>      | ARKA ANAMICA                                                                           | 1   | 0.04% |
| <b>CLUSTERBEAN</b> | GAURI                                                                                  | 1   | 0.04% |
| <b>COEPEA</b>      | PUSA PRAVATI                                                                           | 1   | 0.04% |
| <b>COTTON</b>      | AKA-5                                                                                  | 1   | 0.04% |
| <b>JUTE</b>        | JRO-524JRO-524                                                                         | 63  | 2.41% |
| <b>Green Gram</b>  | BM-2003-02,BM-2002-1,BM-2003-02,BM-2003-2,PKV-8802,PKV-AKM 4,UNNATI, UTKARSH, UTKARSHA | 259 | 9.93% |

|                   |                                                                                                                                                                                  |      |        |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------|
| <b>Soybean</b>    | JS-335,JS-20116,JS-20-116,JS-20-34,JS-335,JS-93 05,JS-9305KDS-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% |
| <b>SUNHEMP</b>    | JRJ-610                                                                                                                                                                          | 2    | 0.08%  |
| <b>TIL</b>        | JLT-408                                                                                                                                                                          | 5    | 0.19%  |
| <b>Pigeon Pea</b> | BDN-716,BSMR-736,ICP-8863,ICPL-87119,MPV-106,PHULE-12,PKV-TARA,ICP-8863                                                                                                          | 202  | 7.74%  |
| <b>Black Gram</b> | BDN-716,BSMR-736,ICP-8863,ICPL-87119,MPV-106,PHULE-12,PKV TARA,PKV-TARA,ICP-8863                                                                                                 | 363  | 13.91% |
| <b>Total</b>      |                                                                                                                                                                                  | 2609 |        |

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

## Area under Seed Production

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

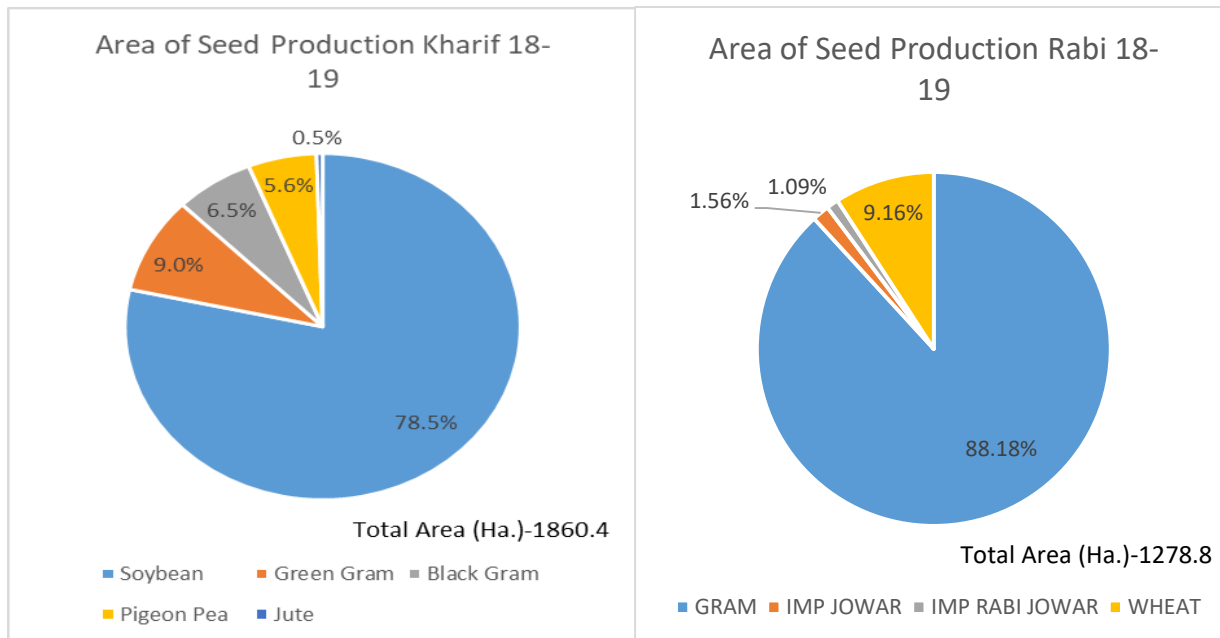


Figure 156: Area under Seed Production (2018-19)

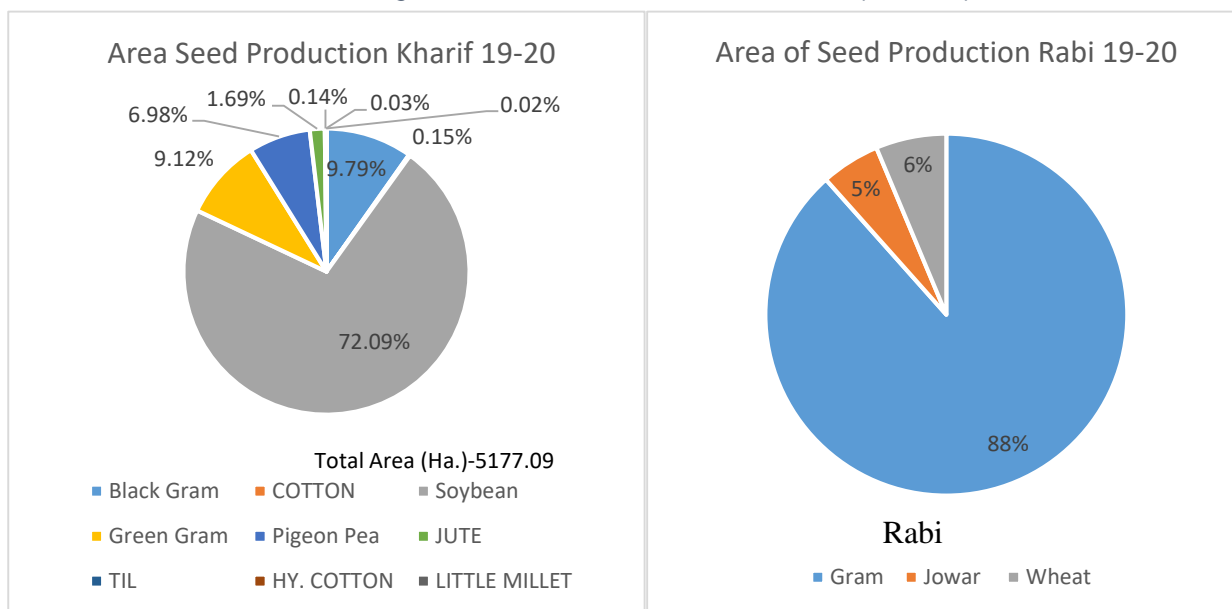


Figure 157: Area under Seed Production 2019-20

Area under seed 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 was 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%)

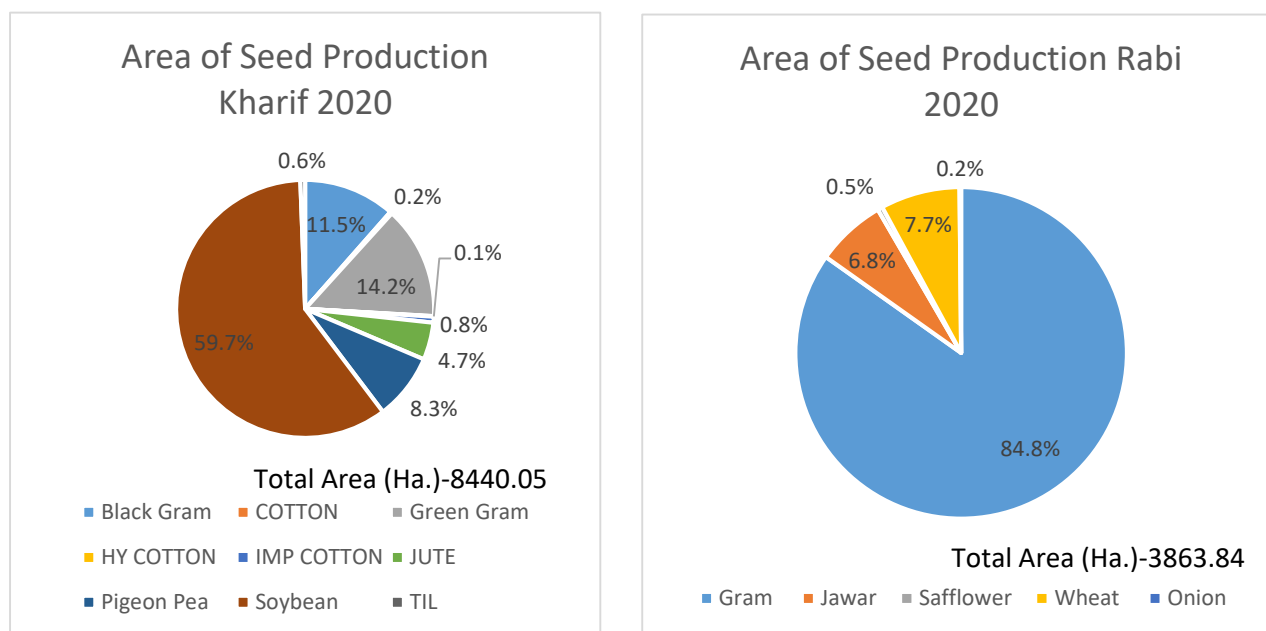


Figure 158: Area under Seed Production 2020-21

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%.

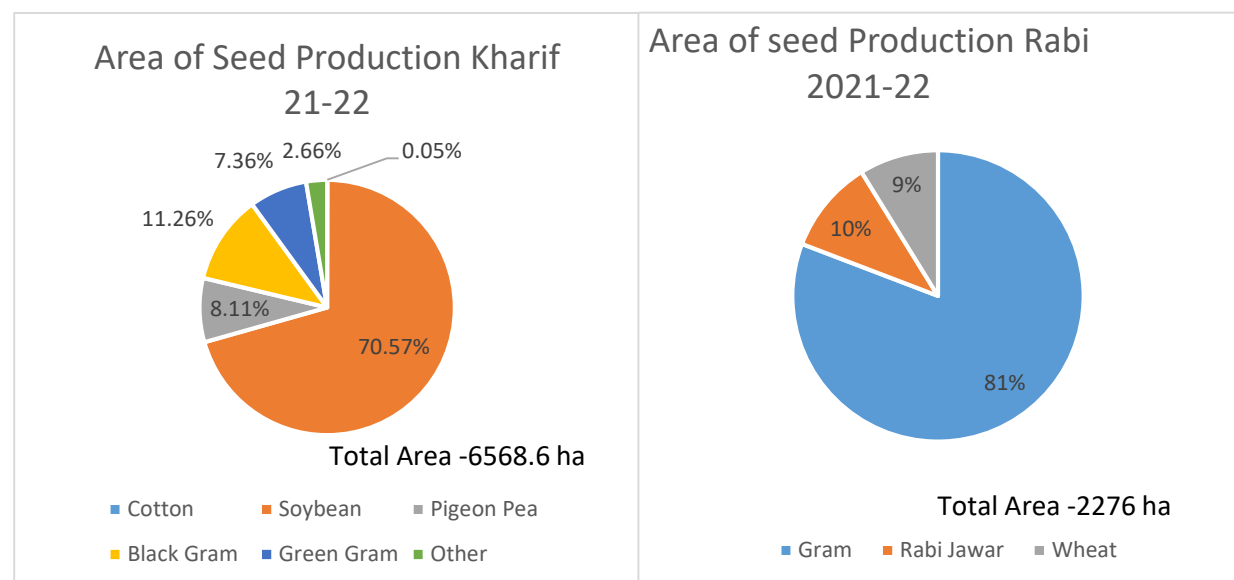


Figure 159: Area of seed Production 2021-22

#### 1.4. 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, 2022 were 901. Out of this, disbursement had been made for 353 applications. The total number of FPOs disbursements were 306 out of 728 applied. The highest number of applications were from Akola (335), followed by Washim (183), Buldhana (124), Amravati (108), Jalgaon (66), Wardha (46) and Yavatmal (39).

Overall, 39.2% of the disbursements have been completed for the applications for FPOs. Highest disbursements were reported in Akola (134), Washim (84), Buldhana (38), Amravati (31), Wardha (30), Yavatmal (13).

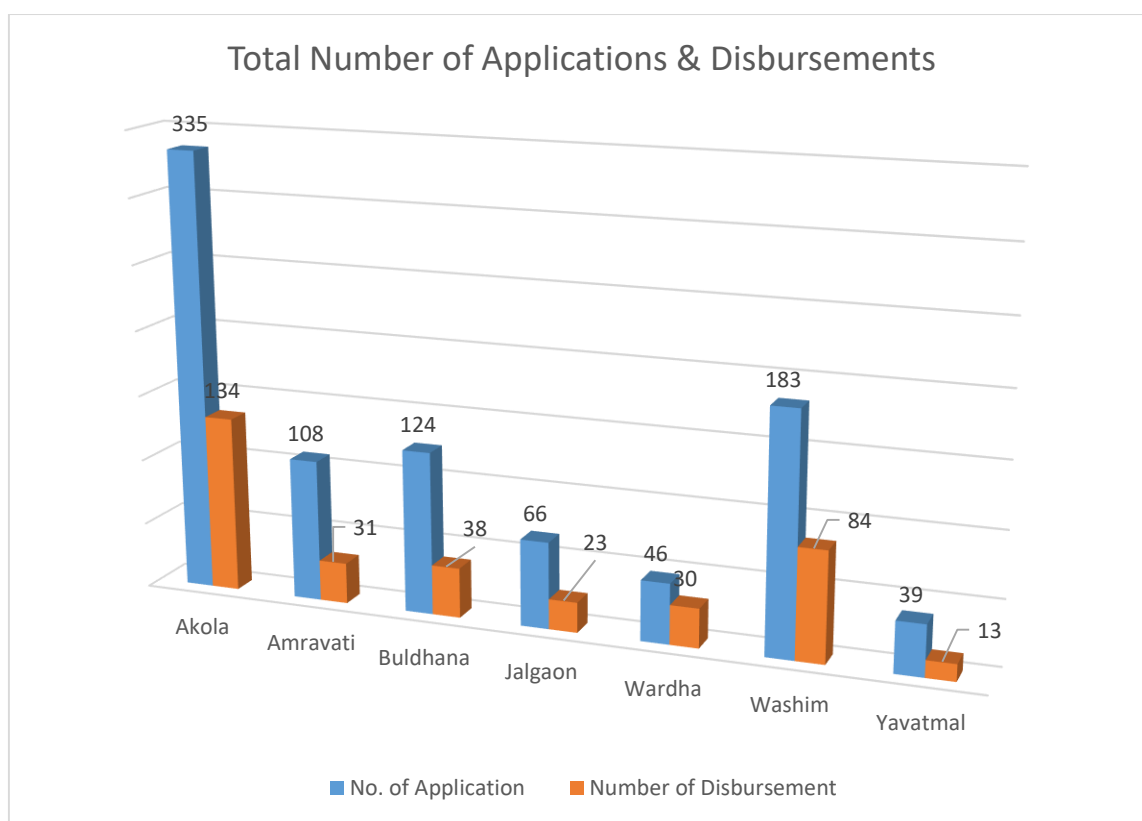


Figure 160: Number of proposals Sanctioned for FPCs

The total disbursement for the FPOs in Rest of Project area up to 31 March 2022 was Rs. 3405.68 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%).

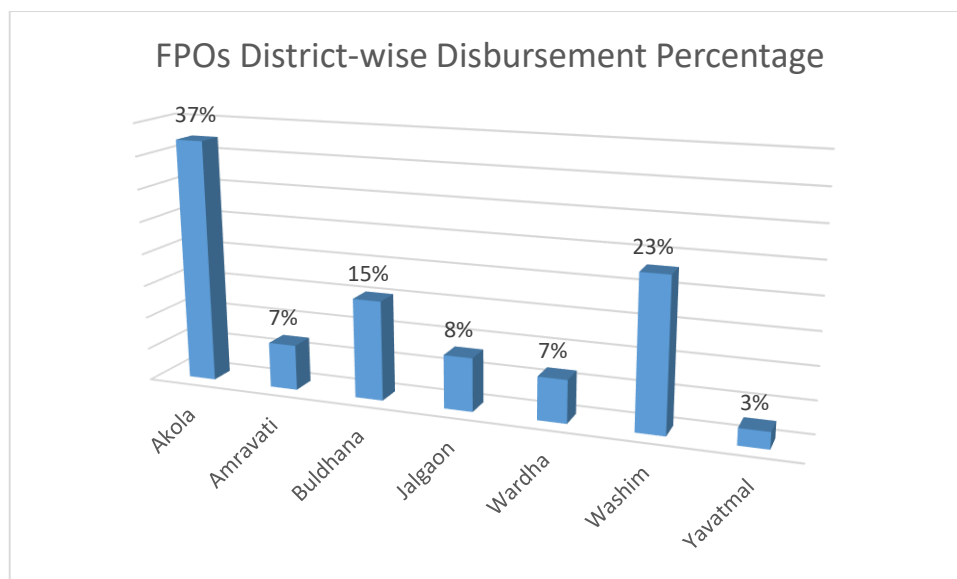


Figure 161: FPOs District-wise disbursement Percentage

Table 27: Total Disbursements- FPCs/SHGs/FIGs

| Activities                    | Number of Proposals |           |            | Total Proposal | Total Disbursed (Lakh) |
|-------------------------------|---------------------|-----------|------------|----------------|------------------------|
|                               | Farmers group       | FPC       | SHG        |                |                        |
| Custom Hiring Centre (CHC)    | 45                  | 32        | 202        | 279            | 2541.12                |
| Godown                        | 2                   | 9         | 20         | 31             | 556.84                 |
| Other Agribusiness Activity   | 1                   | 8         | 8          | 17             | 127.76                 |
| Post harvest/ Processing unit | 2                   | 10        | 14         | 26             | 179.97                 |
| <b>Grand Total</b>            | <b>50</b>           | <b>59</b> | <b>244</b> | <b>353</b>     | <b>3405.68</b>         |

For FPCs/SHG/FIGs, total number of proposals sanctioned till March 31, 2021 were 353. Details of the amount disbursed for FPCs/SHGs/FIGs is presented in the table above. Major business activities are Custom Hiring Centres, Construction of Godown, and other agribusiness activities. Total amount of Rs. 3405.68 Lakhs had been disbursed. Majority of the disbursements (72.5%) have been made for Custom Hiring Centres, followed by Construction of Godown (16%).

## 1.5. VCRMC & Krushi Tai

As of March 31, 2022, 99% (1591) of the VCRMC were formed out of total 1650 Gram Panchayats, covering 2514 villages. E-gram sabha had been conducted in 23% cases. Total 1917 Krushi Tai have been appointed in Rest of Project Area as of March 31, 2022.

Table 28: Status of VCRMC and 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                 |
| 7                  | Yavatmal  | 309         | 212             | 212                       | 0                      | 218                 |
| <b>Grand Total</b> |           | <b>2514</b> | <b>1650</b>     | <b>1643</b>               | <b>378</b>             | <b>1917</b>         |

## 1.6. 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 36489 events have been conducted till March 31, 2022. Total 424634 + participants have been trained under the project. Of the total members who attended trainings, 72.29% were male and 27.71% of them were female members.



Table 29: Training Activities

| District | No. of Events | Male Participants | % Male | Female Participants | % of Female | Total Participants | Others                              | Grand Total                 |
|----------|---------------|-------------------|--------|---------------------|-------------|--------------------|-------------------------------------|-----------------------------|
| Akola    | 9793          | 50117             | 75.13% | 16588               | 24.87%      | 66705              |                                     |                             |
| Amravati | 4473          | 49370             | 72.51% | 18717               | 27.49%      | 68087              |                                     |                             |
| Buldhana | 9547          | 78690             | 70.03% | 33681               | 29.97%      | 112371             | Various online training & Workshops | Total Participants + Others |
| Jalgaon  | 5126          | 42653             | 71.51% | 16992               | 28.49%      | 59645              |                                     |                             |
| Wardha   | 1510          | 20066             | 73.89% | 7091                | 26.11%      | 27157              |                                     |                             |
| Washim   | 2147          | 20021             | 69.33% | 8857                | 30.67%      | 28878              |                                     |                             |
| Yavatmal | 3893          | 46051             | 74.53% | 15740               | 25.47%      | 61791              |                                     |                             |
| Total    | 36489         | 306968            | 72.29% | 117666              | 27.71%      | 424634             | 165483                              | 590117                      |

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

## Exposure Visits

In total, 189 exposure visit events were organized for total 2965 participants. Out of the total participants, 63.5% were male and 36.5 % of them were female.

Table 30: Exposure Visits

| District    | Total Event Organized | Male Participants | % Male | Female Participants | % Female | Total Participants |
|-------------|-----------------------|-------------------|--------|---------------------|----------|--------------------|
| Akola       | 1                     | 13                | 65.00% | 7                   | 35.00%   | 20                 |
| Amravati    | 8                     | 109               | 86.50% | 17                  | 13.50%   | 126                |
| Buldhana    | 73                    | 618               | 56.80% | 470                 | 43.20%   | 1088               |
| Jalgaon     | 4                     | 34                | 54.80% | 28                  | 45.20%   | 62                 |
| Wardha      | 67                    | 708               | 63.80% | 402                 | 36.20%   | 1110               |
| Washim      | 21                    | 195               | 65.00% | 105                 | 35.00%   | 300                |
| Yavatmal    | 15                    | 205               | 79.20% | 54                  | 20.80%   | 259                |
| Grand Total | 189                   | 1882              | 63.50% | 1083                | 36.50%   | 2965               |

## 10. RFID Indicators for CM-V

Table 31: RFID Indicators for Concurrent Monitoring Round-V

### PDO Level Indicators

| S No<br>(as<br>per<br>PAD) | Indicator(s)                                                                                                                                                                               | Definition                                                                                                                                  | Methodology                                                                                                                                                                                                                                                                                                                                                                                                  | Frequency of<br>Measurement | CM-V Value<br>(till 31 <sup>st</sup> March 2022)                                                                                                                                                                                                                                                                         |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5                          | <b>Direct project beneficiaries: number of farmers reached with agricultural assets of services</b><br><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"> <li>The list of total beneficiaries under the project in Rest of Project area was taken from the MIS data till March 31, 2022</li> <li>For DBT beneficiaries, FFS beneficiaries (HF &amp; GF), Training/Exposure visits, online training and workshop conducted</li> <li>Out of this, total female beneficiaries are filtered and % was calculated accordingly</li> </ul> | Semi Annual                 | <b>Overall: 9,59,056 (Females-19%)</b> <ul style="list-style-type: none"> <li>Total DBT Farmers: 91,753 (Females-21%)</li> <li>Total Host Farmers: 6,993 (Females- 13%)</li> <li>Total Guest Farmers: 2,44,628 (Females-17%)</li> <li>Total Participants in trainings/exposure visits: 6,15,682 (Females-20%)</li> </ul> |

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

| No | Indicator(s)                                                                                                                         | Definition                                                                                                                                                | Methodology                                                                                                                                                                                                                                                                                                                                                                                                                                                | Frequency of Measurement | CM-V Value<br>(till 31 <sup>st</sup> March 2022)                                                                                                                                                                                                                                                                                                                                 |
|----|--------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6  | <b>Farmers adopting improved agricultural technology</b><br><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"> <li>The calculations are done from the primary data captured through beneficiary questionnaire in Project &amp; Control Villages</li> <li>Adoption of at least one of the improved agriculture technology was considered based on the technologies asked in the Beneficiary questionnaire</li> <li>Total of the technology adopted was calculated and % calculated with overall total beneficiaries surveyed</li> </ul> | Annual                   | <b>P-61%, C-51%</b><br><i>(These results are based on field survey in 32 project &amp; 16 control villages)</i>                                                                                                                                                                                                                                                                  |
| 7  | <b>Improved water-use efficiency at farm level</b><br><i>Area provided with new/improved irrigation or drainage services (in ha)</i> | <i>This indicator measures in 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"> <li>The list of Activity under Improved water-use efficiency (Sprinkler, Drip, Pipes, Water Pumps, Farm Ponds, Wells &amp; Recharge Structures) activity under the project was taken from the MIS data till March 31, 2022</li> <li>For Sprinkler &amp; Drip Irrigation, the maximum area mentioned under the activity was taken</li> </ul>                                                                             | Annual                   | <b>Total Area- 1,25,903 ha</b> <ul style="list-style-type: none"> <li>Area under Sprinkler: 42568 ha</li> <li>Area under Drip: 64939 ha</li> <li>Area under Water pump &amp; sprinkler: 428 ha</li> <li>Area under Pipes: 8195 ha</li> <li>Area under pumps: 9011 ha</li> <li>Area under farm ponds: 389 ha</li> <li>Area under well &amp; recharge structure: 373 ha</li> </ul> |

| No | Indicator(s)                                                                                                                                                      | Definition                                                                                                                    | Methodology                                                                                                                                                                                                                                                                                                                                                                                                                   | Frequency of Measurement | CM-V Value<br>(till 31 <sup>st</sup> March 2022)                                                                                                                                                                                                             |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    |                                                                                                                                                                   |                                                                                                                               | <ul style="list-style-type: none"> <li>For Pipes, Water Pumps, Farm Ponds &amp; Well Recharge, an area of 1ha had been assumed</li> <li>Total area under all the above activities mentioned was calculated</li> </ul>                                                                                                                                                                                                         |                          |                                                                                                                                                                                                                                                              |
| 8  | <b>Improved availability of surface water for agriculture</b><br><i>Surface water storage capacity from new farm and community ponds (in 1,000 m<sup>3</sup>)</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"> <li>The list of individual new farm ponds constructed under the PoCRA project was taken from the MIS data till March 31, 2022</li> <li>Volume for total 83 farm ponds &amp; 55 community farm ponds was calculated individually as per the standard guidelines under PoCRA</li> <li>Total volume was taken as the Storage Capacity under new &amp; community farm ponds created</li> </ul> | Semi Annual              | <b>Total Storage Capacity under new &amp; community farm ponds: 915.17 (1000 m<sup>3</sup>)</b><br>Storage Capacity under <b>New Farm Ponds: 524.17 (1000 m<sup>3</sup>)</b><br>Storage Capacity under <b>Community Farm Ponds: 391 (1000 m<sup>3</sup>)</b> |
| 9  | <b>Enhanced Soil Health at Farm Level</b><br><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</i>            | <ul style="list-style-type: none"> <li>The list of saline &amp; sodic activities under the PoCRA project was taken from the MIS data till March 31, 2022</li> <li>In Saline &amp; Sodic villages, GAPs are taken as FFS Conducted, Drip, Sprinkler, Farm Ponds &amp; Water Pumps</li> </ul>                                                                                                                                   | Semi Annual              | <b>48,114.96 ha</b>                                                                                                                                                                                                                                          |

| No | Indicator(s) | Definition                                                                            | Methodology                                                                                                                                                                                                                                                                                                                         | Frequency of Measurement | CM-V Value<br>(till 31 <sup>st</sup> March 2022) |
|----|--------------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------------------------------|
|    |              | <i>farmers for improving management of saline and sodic soils in project villages</i> | <ul style="list-style-type: none"> <li>For Sprinkler &amp; Drip Irrigation, the maximum area mentioned under the activity was taken</li> <li>For Pipes, Water Pumps, an area of 1ha had been assumed</li> <li>Total area covered under the above activities was taken as the GAPs adopted in Saline &amp; Sodic Villages</li> </ul> |                          |                                                  |

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

| No | Indicator(s)                                                                                                                                                                                                           | Definition                                                                                                                                                           | Methodology                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Frequency of Measurement | CM-V Value<br>(till 31 <sup>st</sup> March 2022)                                                                                                                              |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10 | <b>Seeds supply: Promotion of climate resilient crop varieties</b><br><br><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"> <li>The calculations are done from the primary data captured through beneficiary questionnaire in Project &amp; Control Villages</li> <li>Area under Climate Resilient Variety for three major crops (Chickpea, Pigeon pea &amp; Soybean) was determined from total responses</li> <li>Total area under the three crop was taken</li> <li>% was calculated by dividing (Area under Climate Resilient Variety/Total Area under the three Crop)</li> </ul> | Annual                   | Overall<br>P- 81%, C- 81%<br>Soybean<br>P-82%, C-83%<br>Chickpea<br>P-82%, C-82%<br>Pigeon pea<br>P-70%, C-60%<br>(These results are based on field survey in 32 project & 16 |

| No | Indicator(s)                                                             | Definition                                                                                                    | Methodology                                                                                                                                                                                                                                                                   | Frequency of Measurement | CM-V Value<br>(till 31 <sup>st</sup> March 2022)                                                                                  |
|----|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
|    |                                                                          |                                                                                                               |                                                                                                                                                                                                                                                                               |                          | control village)                                                                                                                  |
| 11 | <b>Number of project supported FPCs with growth in annual profits</b>    | This indicator reports the number of project-supported Farmer Producer Companies with growth in annual profit | <ul style="list-style-type: none"> <li>List of FPCs for CM-V was taken from PMU</li> <li>Audited Financial Statements of the FPCs was obtained during the survey</li> <li>Number of PoCRA supported FPCs reporting profit are taken</li> </ul>                                | Annual                   | Out of total 21 FPCs 10 FPCs showed profits, while 05 FPCs had suffered loss and 05 FPCs recorded no profit/loss in FY 2021-22.   |
| 14 | <b>Number of approved participatory mini watershed plans implemented</b> | This indicator reports the number of approved participatory mini watershed plans implemented                  | <ul style="list-style-type: none"> <li>The list of CDPs &amp; VDPs approved under the PoCRA project in Rest of Project area was taken from the MIS data till Sep 30, 2020</li> <li>The data was taken for Phase-I villages where Micro-planning had been completed</li> </ul> | Semi Annual              | In 687 villages microplanning were conducted and village development plan (VDP) was prepared duly approved by district committee. |

## 11. Major Observations, Issues and Recommendations

| S.No. | Activities              | Observations/Issues/Challenges                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Recommendations                                                                                                                                                                              |
|-------|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.    | <b>Sprinkler System</b> | Some farmers, who have adopted sprinkler irrigation under the PoCRA project, informed that their water consumption has decreased and their crop yield has increased. Sprinkler irrigation has been the second most important CRT adopted by farmers.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Sprinkler technology need to be popularized more as a water saving technology to maximize GCA and as a crop saving technology capable of giving at least one protective irrigation to crops. |
| 2.    | <b>Farm Machinery</b>   | Decrease in Cost and Increased Benefits due to Use of Machinery. The farmers informed that with the use of technology in agriculture their cost per acre has decreased by 6-7% and their yield of the crop has increased by about 20%. Hence farmers who don't own the machinery like tractor, BBF, etc. they too can utilize the machinery by hiring it and get the higher profit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                              |
| 3.    | <b>Godown of FPC</b>    | NABCONS Team along with officials of Agriculture Department visited the Godown of Krisham Agro Producers Company Ltd at Naya Akola. It is an RCC structure and completed in Jul 2022. Its area is 1200 sq ft and it has the capacity to store 100 MT grains. There was no sign board installed on the gate or front wall of the godown as it has yet to start its functioning. It was informed that the inauguration of the godown will be on 15 Oct 2022 and they will put the proper sign boards before that. The cost of the construction was Rs 14.90 Lakh and they have received the subsidy of Rs 11.17 Lakh. The FPC has 110 shareholders and have a plan to add 350 more shareholders. The Turnover of the company is about Rs 40.00 Lakh. They plan to expand in a big way into seed production / sale, fertilisers and agricultural marketing. The FPC will also rent out the space to the farmers for storage of seeds / grains. The FPC has an implement store, having two tractors, trolley and other implements, which are given to the farmers on rent. |                                                                                                                                                                                              |

|    |                                             |                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                               |
|----|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4. | <b>SHG for Women and Disabled</b>           | There are 65 SHGs for women, 5 for disabled and 2 for widows. They are getting training in various activities and are able to get deposits of Rs 100/- per month per member.                                                                                                                                                                                  |                                                                                                                                                                                                                                                               |
| 5. | <b>Discussions regarding FFS, FPO, FPC.</b> | It was informed that FFS has been closed for the last 2 years. Now Agricultural Assistant is giving six trainings for each of crop (Soybean and Cotton). The AA has completed three trainings for each crop (soybean and cotton) to the farmers regarding from sowing to harvesting, seed treatment, pest and disease identification and spray of pesticides. |                                                                                                                                                                                                                                                               |
| 6. | <b>Seed production under PoCRA</b>          | Seed production of Soybean, Green gram and Chickpea has emerged as an important CRT in the PoCRA villages. Five farmers had adopted for seed production of Soybean and Chick pea. Hiring of Agricultural implements /machinery is feasible now. They have no difficulty in the sale of their produce.                                                         | Encouragement of Seed production plots and distribution of improved seeds must be continued as an important CRT activity. The variety JS9305 of Soybean with BBF technology has reportedly reduced the seed and water requirement with 20% increase in yield. |
| 7. | <b>PVC Pipes and Machineries</b>            | Major Popular Items are Put on Hold. Farmers informed that major items like electric pump / diesel pump, connecting PVC pipes, dug wells, and community ponds are put on hold now. Dug wells, Farm ponds and community ponds are also used as rain water harvesting structures and their water is used for irrigation. These items have been put on hold.     | Since the provision exist and if found feasible, construction of open dug wells, farm ponds, connecting pipes and pumps may be allowed with the condition that irrigation should be done through Drip / Sprinkler Irrigation only.                            |
| 8. | <b>Backyard Rearing</b>                     | Farmers are interested in goat rearing and poultry. As per farmers this activity has been put on hold. Some farmers have bought the goats from their own resources.                                                                                                                                                                                           |                                                                                                                                                                                                                                                               |
| 9. | <b>Biofertilizers &amp; Vermicompost</b>    | There seemed to be lot of options for use of Biofertilizers / Vermicompost in these villages.                                                                                                                                                                                                                                                                 | Since a lot of farm waste and animal dung is available, there is a need to properly educate the farmers to convert this into biofertilizers. This will reduce their expenses on chemical fertilizers.                                                         |



|     |                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                         |
|-----|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10. | <b>Use of Solar Power</b>                             | Electricity issue was observed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | As electricity is available for lesser time, the farmers should be briefed about the solar power and schemes available for installing solar power at subsidized rates.                                                                                                                                  |
| 11. | <b>Helping Farmers through Knowledge and Finances</b> | It was observed that small farmers cannot get the full benefits of the project as either they do not know the total facilities available in the project or due to lack of funds to be invested before getting the available subsidy. Medium and big farmers may have sufficient money and hence can choose the scheme and invest from their own resources. They can afford to get the subsidy later on, whereas small farmers cannot do so. Accordingly, complete information of the project components be given to the farmers so that they can choose the suitable component. | A cooperative bank or financing institute may be roped in to help them for getting finances. This way small farmers too can get the full benefits of the Project.                                                                                                                                       |
| 12. | <b>Training to VCRMC</b>                              | There are 13 Members of the VCRMC. Regular meetings are held. No training has been given to VCRMC members.                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Training should be given to Krushi Tai and VCRMC members regularly to improve their functioning.                                                                                                                                                                                                        |
| 13. | <b>Training / Interaction with Farmers</b>            | Need for training and interaction was felt during the visit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | There is need to provide training / interaction with the farmers to apprise them about the Project, its components, various schemes regarding saving of water and energy, drip irrigation, sprinkler irrigation, solar power, biofertilizers, soil health card, etc.                                    |
| 14. | <b>Physical and Financial Progress</b>                | Disbursement of various components under PoCRA at 65 in a village of 672 farmers and 162 in a village of 1800 farmers indicate a physical coverage of less than 10%. Maximum disbursement was under sprinkler (39) followed by seed plot (17), FFS (6), tractor+ BBF (2) and one godown for FPC.                                                                                                                                                                                                                                                                                | Progress of disbursement under various components can be analyzed only if component wise/ village wise targets are indicated against disbursement. It is recommended that village wise secondary data on physical and financial targets vis-à-vis achievements be provided by the Investigating Agency. |

|     |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 15. | <b>Village committee</b>             | VCMRC has been formed and working well in the villages with representation of women, SC, ST, OBC, nomadic tribe groups. The committee was effectively deciding on the eligibility of applicants under PoCRA.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | The VCRM concept may be retained and continued post PoCRA for channelizing various developmental projects.                                                                                                                                                                                                                                                                                                                                                                                                                |
| 16. | <b>Cropping pattern</b>              | Cropping pattern in the villages have been changed from sunflower and groundnut during Kharif to Soybean. Farmers also rotate green gram and cotton as a strategy to combat organic matter shortage in the soil.                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Cropping pattern advisory need to be devised and disseminated to farmers incorporating contingent plans in case of delayed monsoon, long dry spell, water logging due to excess rainfall, etc. The contingent plan must have facility to supply seed to farmers at short interval. Organic matter content of dryland soils need to be improved as it raises water holding capacity and fertility of the soil. Cultivation of organic matter crops like <i>Glyricidia</i> on farm boundaries need to be promoted as a CRT. |
| 17. | <b>Support for landless families</b> | Out of 115 landless families in the village 64 families had applied for goat farming.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Goat/ Sheep/ Poultry farming are livelihood activities undertaken by landless families in the dry land areas. Appropriate project interventions/livelihood activities for landless families needed to be promoted as a CRT.                                                                                                                                                                                                                                                                                               |
| 18. | <b>Farm Income</b>                   | Data on Farm income, a RFID PDO, is captured separately for men-headed, women-headed and overall households in all the surveys including CM rounds, Mid Term and Final. The increase in household income from base level to subsequent rounds of survey is envisaged as an incentive derived by PoCRA assisted households for undertaking climate change adaptation and mitigation measures in their farm to combat climate change and achieve climate resilience. Farm household income is calculated from 4 different sources viz., wages, crop cultivation, livestock and off-farm activities. The increase in farm household income consequent to PoCRA interventions, therefore, can be | The increase in farm household income consequent to PoCRA interventions may be analyzed gender group wise and source wise.                                                                                                                                                                                                                                                                                                                                                                                                |

|     |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                            |
|-----|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
|     |                          | analysed source wise. Separate sample study may not be warranted as these parameters are part of surveys and covered in the questionnaires used for the surveys.                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                            |
| 19. | <b>Economic Analysis</b> | To ensure sustainability of comprehensive farm and off-farm interventions undertaken to build resilience under PoCRA, there is a need to strengthen local level institutions like VCRMC and improve their capacity to make village development plans (VDP) for climate adaptation and induce changes in farm practices. Profitability is an important incentive for households to bring crop diversification, access knowledge (FFS), access farm assets (Farm mechanization) and explore better opportunities for marketing (FPOs, SMEs). These aspects covered in the surveys as part of resilience matrix. | Data on Village wise investments under PoCRA and area benefitted may be provided from MIS. |

## Annexure-I: List of Project & Control Villages Surveyed

### List of Project Villages

| S.No. | District | Taluka        | Village Name          | Cluster Code  | Village Code | Type        | Phase     |
|-------|----------|---------------|-----------------------|---------------|--------------|-------------|-----------|
| 1     | Akola    | Murtizapur    | Shelu Najik           | 501_pt-20_01  | 530189       | Kharpan     | Phase II  |
| 2     | Akola    | Akot          | Rohankhed             | 501_ptsp-1_04 | 529830       | Kharpan     | Phase II  |
| 3     | Akola    | Akola         | Takali Jalam          | 501_ptr-2_04  | 530008       | Kharpan     | Phase II  |
| 4     | Akola    | Akola         | Bahirkhed             | 501_pt-19_02  | 530059       | Kharpan     | Phase I   |
| 5     | Akola    | Telhara       | Khakata               | 501_pt-7_07   | 529691       | Kharpan     | Phase II  |
| 6     | Akola    | Barshitalki   | Mirzapur              | 501_ptr-4_02  | 530496       | Non Kharpan | Phase I   |
| 7     | Akola    | Patur         | Belura Kh.            | 501_ptmn-3_03 | 530390       | Non Kharpan | Phase III |
| 8     | Amravati | Bhatkuli      | Narayanpur            | 503_ptb-4_03  | 532847       | Kharpan     | Phase II  |
| 9     | Amravati | Daryapur      | Shivarkheda           | 503_ptc-1_04  | 532954       | Kharpan     | Phase II  |
| 10    | Amravati | Chikhaldara   | Koylari               | 503_te-1a_02  | 531646       | Non Kharpan | Phase I   |
| 11    | Amravati | Dhamangaon    | Jalgaon               | 503_wr-7_01   | 533290       | Non Kharpan | Phase I   |
| 12    | Amravati | Anjangaon     | Sarfabad              | 503_ptc-1_06  | 531845       | Kharpan     | Phase II  |
| 13    | Buldhana | Jalgaon Jamod | Sawargaon             | 500_pt-14_06  | 528220       | Kharpan     | Phase II  |
| 14    | Buldhana | Nandura       | Alampur               | 500_pt-16_02  | 528501       | Kharpan     | Phase II  |
| 15    | Buldhana | Sangrampur    | Ladnapur              | 500_pt-10_02  | 528312       | Non Kharpan | Phase III |
| 16    | Buldhana | Lonar         | Kaulkhed              | 500_pg-6_02   | 529581       | Non Kharpan | Phase II  |
| 17    | Buldhana | Malkapur      | Kalegaon Pr.Malkapur  | 500_ptv-2_02  | 528582       | Kharpan     | Phase II  |
| 18    | Buldhana | Shegaon       | Gavhan                | 500_ptmb-1_02 | 528467       | Kharpan     | Phase II  |
| 19    | Buldhana | Chikhli       | Yewata                | 500_gp-32a_01 | 529197       | Non Kharpan | Phase II  |
| 20    | Jalgaon  | Muktainagar   | Kothali               | 499_pt-13_01  | 527027       | Kharpan     | Phase I   |
| 21    | Jalgaon  | Raver         | Raipur                | 499_te-7_04   | 526932       | Non Kharpan | Phase II  |
| 22    | Jalgaon  | Jamner        | Pat Khede             | 499_te-5c_04  | 528023       | Non Kharpan | Phase III |
| 23    | Jalgaon  | Bhadgaon      | Shindi                | 499_te-33_01  | 527669       | Non Kharpan | Phase III |
| 24    | Jalgaon  | Erandol       | Adgaon                | 499_te-27_03  | 527300       | Non Kharpan | Phase II  |
| 25    | Jalgaon  | Chalisgaon    | Ozar                  | 499_te-35_01  | 527792       | Non Kharpan | Phase III |
| 26    | Wardha   | Deoli         | Bopapur               | 504_wr-25_04  | 534304       | Non Kharpan | Phase I   |
| 27    | Washim   | Manora        | Amdari                | 502_pgaa-3_02 | 531137       | Non Kharpan | Phase III |
| 28    | Washim   | Washim        | Malegaon N. Bhat Umra | 502_pga-1_01  | 531208       | Non Kharpan | Phase I   |
| 29    | Washim   | Karanja       | Kisan Nagar           | 502_ptkp-1_03 | 530981       | Non Kharpan | Phase I   |
| 30    | Yavatmal | Ralegaon      | Bhimsenpur            | 510_pgk-1_03  | 543661       | Non Kharpan | Phase II  |
| 31    | Yavatmal | Yavtmal       | Sawargad              | 510_pgw-1_01  | 542431       | Non Kharpan | Phase I   |

|                                   |          |         |             |              |        |             |         |
|-----------------------------------|----------|---------|-------------|--------------|--------|-------------|---------|
| 32                                | Yavatmal | Kelapur | Pimpri Road | 510_pgk-5_03 | 543477 | Non Kharpan | Phase I |
| Two Extra Villages for NRM sample |          |         |             |              |        |             |         |
| 33                                | Wardha   | Deoli   | Akoli       | 504_wr-25_04 | 534247 | Non Kharpan | Phase I |
| 34                                | Washim   | Washim  | Pandaw Umra | 502_pga-1_01 | 531207 | Non Kharpan | Phase I |

### List of Control Villages

| Sr. No | District | Taluka      | Village        | Cencode | Cluster code  |
|--------|----------|-------------|----------------|---------|---------------|
| 1      | Akola    | Akola       | Masa           | 530120  | 501_pt-18_04  |
| 2      | Akola    | Barshitalki | Wagha Kh.      | 530551  | 501_ptk-3_03  |
| 3      | Akola    | Balapur     | Manaki         | 529961  | 501_ptmn-3_04 |
| 4      | Amravati | Anjangaon   | Sategaon       | 531746  | 503_ptsb-1_02 |
| 5      | Amravati | Chikhaldara | Pandhra Khadak | 531579  | 503_ptsb-1_06 |
| 6      | Amravati | Dhamangaon  | Khanapur       | 533298  | 503_wr-7_03   |
| 7      | Buldhana | Lonar       | Udanapur       | 529540  | 500_pg-5a_02  |
| 8      | Buldhana | Nandura     | Rampur         | 528507  | 500_pt-16_02  |
| 9      | Buldhana | Sangrampur  | Wasali         | 528301  | 500_pt-10_02  |
| 10     | Jalgaon  | Bhadgaon    | Warkhed        | 527687  | 499_te-27_01  |
| 11     | Jalgaon  | Bhadgaon    | Dalwade        | 527702  | 499_te-34_02  |
| 12     | Jalgaon  | Jamner      | Moyagaon Bk.   | 528067  | 499_te-14_02  |
| 13     | Wardha   | Deoli       | Andori         | 534305  | 504_wr-25_03  |
| 14     | Washim   | Manora      | Karli          | 531072  | 502_pgaa-2_03 |
| 15     | Washim   | Malegaon    | Kolgaon Kh.    | 530673  | 502_ptmn-1_04 |
| 16     | Yavatmal | Yavatmal    | Mangrul        | 542426  | 510_pga-5a_01 |

## Annexure II: List of SHG in CM V

| Sr. No | District | Taluka          | Village       | Name of Farmer Group                              | Registered as | Activity                               |
|--------|----------|-----------------|---------------|---------------------------------------------------|---------------|----------------------------------------|
| 1      | Akola    | Patur           | Agikhed       | Shri Gajanan Shetkari Gat                         | SHG           | Establishment of Custom Hiring Centers |
| 2      | Akola    | Balapur         | Dongargaon    | Kastakar Shetkari Gat                             | Farmers group | Establishment of Custom Hiring Centers |
| 3      | Akola    | Balapur         | Hadnapur      | Jay Gajanan Shetkari Utpadak Gat                  | SHG           | Establishment of Custom Hiring Centers |
| 4      | Akola    | Barshitalki     | Kanheri       | Shrisiddheshvar Shetkari Utpadak Gat              | SHG           | Establishment of Custom Hiring Centers |
| 5      | Akola    | Akola           | Khadki Takali | Jay Bhavani Shetkari Utpadak Gat                  | SHG           | Establishment of Custom Hiring Centers |
| 6      | Akola    | Balapur         | Khirpuri Bk.  | Mahalkshmi Shetkari Shetmal Utpadak Gat           | SHG           | Establishment of Custom Hiring Centers |
| 7      | Akola    | Akola           | Nimbhora      | Kastkar Shetkari Upatadak Gat                     | Farmers group | Establishment of Custom Hiring Centers |
| 8      | Amravati | Chandur Railway | Dahigaon      | Ramgiri Mahila Bachat Gat                         | SHG           | Establishment of Custom Hiring Centers |
| 9      | Amravati | Anjangaon       | Ratnapur      | Shivneri Swayam Sahayata Mahila Bachat Gat        | SHG           | Establishment of Custom Hiring Centers |
| 10     | Jalgaon  | Parola          | Bhondandigar  | Shivraj Krushi Vidnyan Mandal Bhondan             | SHG           | Establishment of Custom Hiring Centers |
| 11     | Jalgaon  | Jalgaon         | Vitner        | Jay Bholenath Shetkari Gat                        | SHG           | Establishment of Custom Hiring Centers |
| 12     | Wardha   | Seloo           | Junona        | Yamuna Swayam Sahayata Mahila Bachat Gat          | SHG           | Establishment of Custom Hiring Centers |
| 13     | Washim   | Washim          | Asola         | Jay Hanuman Shetakri Gat Asola                    | SHG           | Establishment of Custom Hiring Centers |
| 14     | Washim   | Risod           | Kurha         | Gopinath Mundhe Shetkari Bachat Gat               | SHG           | Establishment of Custom Hiring Centers |
| 15     | Washim   | Karanja-Washim  | Sohal         | Bhagwanbaba Shetkari Sheti Swavalamban Bachat Gat | SHG           | Establishment of Custom Hiring Centers |
| 16     | Yavatmal | Umarkhed        | Marsul        | Krushi Samruddhi Shetkari Bachat Gat              | Farmers group | Establishment of Custom Hiring Centers |










### Annexure III: List of FPC in CM V

| S.N. | District | Taluka   | Village        | Name of FPC                                               | Benefitted by the Activity                                            |
|------|----------|----------|----------------|-----------------------------------------------------------|-----------------------------------------------------------------------|
| 1    | Akola    | Akola    | Agar           | Varhad Grains Agriculture Producer Company Limited, Agar  | Sale of Agricultural Input (Seeds, Fertilizers and Insecticides etc.) |
| 2    | Akola    | Akola    | Akola          | Graminkrushi Parivartan Shetkari Producer Company Limited | Establishment of Custom Hiring Centers                                |
| 3    | Akola    | Akot     | Akoli Jahagir  | Agricurve Agro Farmers Producer Company Limited           | Establishment of Custom Hiring Centers                                |
| 4    | Akola    | Telhara  | Belkhed        | Belkhed Farmer Producer Company Limited                   | Establishment of Custom Hiring Centers                                |
| 5    | Akola    | Akot     | Kasod Shivpur  | Farmgrowth Science Farmers Producer Company Limited       | Grain Processing Unit (Cleaning/Sorting/Grading Unit)                 |
| 6    | Akola    | Balapur  | Khirpuri Kh.   | Krushi Annadata Farmer Producer Company Ltd. Khirpuri     | Establishment of Custom Hiring Centers                                |
| 7    | Akola    | Balapur  | Vyalla         | Nishad Farmer Producer Company, Vyala                     | Establishment of Custom Hiring Centers                                |
| 8    | Akola    | Akot     | Wadali Satawai | Agritrend Farmers Producer Company Limited                | Establishment of Custom Hiring Centers                                |
| 9    | Akola    | Telhara  | Warkhed        | Bajrang Bali Farmers Producer Company Limited             | Establishment of Custom Hiring Centers                                |
| 10   | Amravati | Amravati | Naya Akola     | Krishami Agro Producer Company Ltd                        | Establishment of Custom Hiring Centers                                |
| 11   | Amravati | Warud    | Rajura Bazar   | Cottonbee Agro Producer Company Limited, Warud            | Establishment of Custom Hiring Centers                                |
| 12   | Buldhana | Chikhli  | Antri Khedekar | Yashoday Farmers Producer Company Limited                 | Grain Processing Unit (Cleaning/Sorting/Grading Unit)                 |
| 13   | Buldhana | Malkapur | Malkapur       | Jay Sardar Krushi Vikas Farmers Producer Company Limited  | Construction of Godown/ Small Warehouse                               |



|           |          |                 |                  |                                                      |                                                       |
|-----------|----------|-----------------|------------------|------------------------------------------------------|-------------------------------------------------------|
| <b>14</b> | Buldhana | Chikhli         | Sawargaon Dukare | Kulbhushan Farmers Producer Company Limited          | Oil Extraction Unit                                   |
| <b>15</b> | Buldhana | Nandura         | Shemba           | Shemba Kranti Agro Producer Company Limited          | Oil Extraction Unit                                   |
| <b>16</b> | Wardha   | Samudrapur      | Kandhali         | Wanashish Multicrop Farmer Producer Company Limited  | Establishment of Custom Hiring Centers                |
| <b>17</b> | Washim   | Malegaon Washim | Borgaon          | Krushideep Agricultural Producer Company Limited     | Seed Processing Unit                                  |
| <b>18</b> | Washim   | Karanja-Washim  | Bramhanwada      | Pariwartan Organic Farmers Producer Company Limite   | Grain Processing Unit (Cleaning/Sorting/Grading Unit) |
| <b>19</b> | Washim   | Risod           | Wakad            | Mahavidarbha Farmer Producer Company Limited         | Establishment of Custom Hiring Centers                |
| <b>20</b> | Yavatmal | Mahagaon        | Mohadi           | The Mahagaon Taluka Farmers Producer Company Limited | Establishment of Custom Hiring Centers                |
| <b>21</b> | Yavatmal | Wani            | Wani             | Rangnathswami Farmers Producer Company Limited       | Establishment of Custom Hiring Centers                |





### Annexure-IV: Verification of Agri-Business Assets of Project Beneficiaries



| Sr. No. | FPC Name                                  | District | Taluka   | Village      | Activity                                       | Remarks                                                                                               | Asset Verification Photographs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------|-------------------------------------------|----------|----------|--------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1       | Krishami Agro Producer Company Pvt. Ltd.  | Amravati | Amravati | Naya Akola   | Establishment of Custom Hiring Centre & Godown | CHC was observed in working condition, while Godown construction was just completed during the visit. |       |
| 2       | Cottonbee Agro Producer Company Pvt. Ltd. | Amravati | Warud    | Rajura Bazar | Establishment of Custom Hiring Centre          | CHC activity was observed in working condition.                                                       |                                                                                                                                                                                                                                                          |




|   |                                                             |       |       |              |                                                                       |                                                 |                                                                                                                                                                                                                                                                   |
|---|-------------------------------------------------------------|-------|-------|--------------|-----------------------------------------------------------------------|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   |                                                             |       |       |              |                                                                       |                                                 |                                                                                                                                                                                                                                                                   |
| 3 | Varhad Grains Agriculture Producer Company Pvt. Ltd.        | Akola | Akola | Agar         | Sale of Agricultural Input (Seeds, Fertilizers and Insecticides etc.) | Activity was observed in working condition.     |          |
| 4 | Gramin Krushi Parivartan Farmers Producer Company Pvt. Ltd. | Akola | Akola | Akola        | Establishment of Custom Hiring Centre                                 | CHC activity was observed in working condition. |          |
| 5 | Agricurve Agro Farmers Producer Company Pvt. Ltd.           | Akola | Akot  | AkoliJahagir | Establishment of Custom Hiring Centre                                 | CHC activity was observed in working condition. |    |




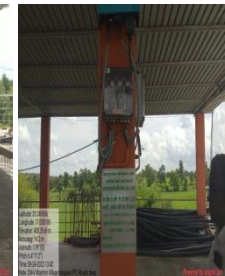

|   |                                                           |       |         |                |                                                       |                                                 |                                                                                                                                                                                                                                                                                                                                                                                        |
|---|-----------------------------------------------------------|-------|---------|----------------|-------------------------------------------------------|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6 | Belkhed Farmer Producer Company Pvt. Ltd.                 | Akola | Telhara | Belkhed        | Establishment of Custom Hiring Centre                 | CHC activity was observed in working condition. |  <p>Latitude: 21.064747<br/>Longitude: 76.961805<br/>Elevation: 308.14612 m<br/>Accuracy: 11.3 m<br/>Time: 09-03-2022 18:08<br/>Note: Belkhed Farmers Producer Company Pvt. Ltd.<br/>Asset verification<br/>village - Belkhed taluka - Telhara Dist - Akola CM-5 POCRA<br/>Prepared by: NABCONS</p> |
| 7 | Farm growth Science Farmers Producer Company Pvt. Limited | Akola | Akot    | Kasod Shivapur | Grain Processing Unit (Cleaning/Sorting/Grading Unit) | Activity was observed in working condition.     |  <p>Latitude: 21.135132<br/>Longitude: 76.90254<br/>Elevation: 332.37464 m<br/>Accuracy: 26.00 0 m<br/>Time: 09-01-2022 13:27<br/>Note: farmgrowth science FPC<br/>grain processing Unit<br/>project village - Kasod Shivapur taluka - Akot Dist - Akola CM-5 POCRA<br/>Prepared by: NABCONS</p>   |


|   |                                                   |       |         |              |                                       |                                                 |                                                                                      |
|---|---------------------------------------------------|-------|---------|--------------|---------------------------------------|-------------------------------------------------|--------------------------------------------------------------------------------------|
| 8 | Krusha Annadata Farmer Producer Company Pvt. Ltd. | Akola | Balapur | Kharpuri Kh. | Establishment of Custom Hiring Centre | CHC activity was observed in working condition. |   |
| 9 | Nishad Farmer Producer Company Pvt. Ltd.          | Akola | Balapur | Vyala        | Establishment of Custom Hiring Centre | CHC activity was observed in working condition. |  |



|    |                                                |       |         |                |                                       |                                                 |                                                                                                                                                                                                                                                                                                                                              |
|----|------------------------------------------------|-------|---------|----------------|---------------------------------------|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10 | Agritrend Farmers Producer Company Pvt. Ltd.   | Akola | Akot    | Wadali Satawai | Establishment of Custom Hiring Centre | CHC activity was observed in working condition. |  <p>Latitude: 21.101724<br/>Longitude: 72.0161<br/>Elevation: 261.5417 m<br/>Accuracy: 7.1 m<br/>Time: 04/06/2022 16:55<br/>Note: Agritrend Farmers Producer<br/>Asset verification- CHC<br/>Village- Wadali Satawai taluka - Akola Dist. Akola Dist.</p> |
| 11 | Bajrangbali Farmers Producer Company Pvt. Ltd. | Akola | Telhara | Warkhed        | Establishment of Custom Hiring Centre | CHC activity was observed in working condition. |  <p>Latitude: 21.124123<br/>Longitude: 76.792582<br/>Elevation: 319.8616 m<br/>Accuracy: 8.4 m<br/>Time: 04/06/2022 10:14<br/>Note: Bajrangbali Farmers Producer<br/>CHC Asset verification<br/>Village Warkhed taluka - Tehelgaon Akola Dist.</p>       |

|    |                                                            |          |          |                  |                                                       |                                             |                                                                                      |
|----|------------------------------------------------------------|----------|----------|------------------|-------------------------------------------------------|---------------------------------------------|--------------------------------------------------------------------------------------|
| 12 | Yashoday Farmers Producer Company Pvt. Ltd.                | Buldhana | Chikhali | Antri Khedkar    | Grain Processing Unit (Cleaning/Sorting/Grading Unit) | Activity was observed in working condition. |   |
| 13 | Jay Sardar Krushi Vikas Farmers Producer Company Pvt. Ltd. | Buldhana | Malkapur | Malkapur         | Construction of Godown/ Small Warehouse               | Activity was observed in working condition. |   |
| 14 | Kulbhushan Farmers Producer Company Pvt. Ltd.              | Buldhana | Chikhali | Sawargaon Dukare | Oil Extraction Unit                                   | Activity was observed in working condition. |  |

|    |                                                    |          |          |         |                                         |                                             |                                                                                                                                                                                                                                                             |
|----|----------------------------------------------------|----------|----------|---------|-----------------------------------------|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 15 | Shemba Kranti Agro Producer Company Pvt. Ltd.      | Buldhana | Nandura  | Shemba  | Oil Extraction Unit                     | Activity was observed in working condition. |                                                                                       |
| 16 | Krushideep Agricultural Producer Company Pvt. Ltd. | Washim   | Malegaon | Borgaon | Solar Panel Unit (Seed Production Unit) | Activity was observed in working condition. |    |


|    |                                                       |        |               |             |                                                       |                                             |                                                                                      |
|----|-------------------------------------------------------|--------|---------------|-------------|-------------------------------------------------------|---------------------------------------------|--------------------------------------------------------------------------------------|
| 17 | Parivartan Organic Farmers Producer Company Pvt. Ltd. | Washim | Karanja (Lad) | Bramhanwada | Grain Processing Unit (Cleaning/Sorting/Grading Unit) | Activity was observed in working condition. |   |
| 18 | Mahavidarbha Farmers Producer Company Pvt. Ltd.       | Washim | Risod         | Wakad       | Establishment of Custom Hiring Centre                 | Activity was observed in working condition. |  |






|    |                                                        |          |            |          |                                       |                                             |                                                                                       |
|----|--------------------------------------------------------|----------|------------|----------|---------------------------------------|---------------------------------------------|---------------------------------------------------------------------------------------|
| 19 | Wanashish Multicrop Farmers Producer Company Pvt. Ltd. | Wardha   | Samudrapur | Kandhali | Establishment of Custom Hiring Centre | Activity was observed in working condition. |    |
| 20 | The Mahagaon Taluka Farmers Producer Company Pvt. Ltd. | Yavatmal | Mahagaon   | Mohadi   | Establishment of Custom Hiring Centre | Activity was observed in working condition. |    |
| 21 | Rangnathswami Farmers Producer Company Pvt. Ltd.       | Yavatmal | Wani       | Wani     | Establishment of Custom Hiring Centre | Activity was observed in working condition. |  |

### Annexure-V: Community (NRM) Activities Observations


During CM-V team members had visited community activities implemented/constructed in Washim, Wardha and Yavatmal district. Graded/Compartment Bunding, Desilting of Old Water Structures and CNB has implemented under the PoCRA project. The detail observations are as below-


| S.N. | Activity                     | No. of Bene. | Village     | Tehsil      | District | Observations and Suggestions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Photographs                                                                          |
|------|------------------------------|--------------|-------------|-------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| 1.   | Graded / Compartment Bunding | 10           | Kisan Nagar | Karanja Lad | Washim   | <p>Observations:</p> <ol style="list-style-type: none"> <li>1. No intermediate bunds were observed, bunds were constructed along the boundary of the field only.</li> <li>2. Bunds were not constructed across the slope of the field.</li> <li>3. No outlets for draining out the excess water from the field were constructed.</li> <li>4. It will help to increase the ground water level of the Dug well and Bore well in the area.</li> <li>5. Bunds were constructed properly; size and shape were observed satisfactory.</li> <li>6. Measurements were found as per the MB.</li> <li>7. MB was properly maintained and updated with signature and seal of the higher authority.</li> </ol> <p>Suggestions:</p> <ol style="list-style-type: none"> <li>1. Encouraging the farmers for constructing the intermediate bunds across slope.</li> </ol> |  |

|    |                             |    |                         |        |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                      |
|----|-----------------------------|----|-------------------------|--------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|    |                             |    |                         |        |        | <p>2. Top dressing and shaping should be completed at the time of completion of the work.</p> <p>3. Outlets are essential; though soil type was black cotton, water logged conditions may occurs during high intensity rainfall. It should be constructed at lower part so that the excess water flows down.</p> <p>4. Plantations should be done on the bunds to make it more compact.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |
| 2. | Graded /Compartment Bunding | 10 | Malegao n N. Bhat Umara | Washim | Washim | <p>Observations:</p> <p>1. Mostly boundary bunds were constructed, intermediate bunds were not observed in the fields.</p> <p>2. Proper size and shape were observed, only top dressing was not found.</p> <p>3. Green covers over bunds were observed, it would help in compacting the bunds. 4. Measurements were found as per the MB, it has properly maintained and updated with signature and seal of the higher authority.</p> <p>5. Bunds were not constructed across the slope of the field.</p> <p>6. No outlets for draining out the excess water from the field were constructed.</p> <p>7. It helps in increase in ground water level of the Dug well and Bore well in the area.</p> <p>Suggestions:</p> <p>1. Insist the farmers for constructing the intermediate bunds across slope.</p> <p>2. Top dressing and shaping should be completed at the time of completion of the work.</p> |  |

|    |                             |    |              |        |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                     |
|----|-----------------------------|----|--------------|--------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|    |                             |    |              |        |        | <p>3. Outlets are essential; though soil type was black cotton therefore water logged conditions may occurs. It should be constructed at lower part for draining the excess water.</p> <p>4. Plantations should be done on the bunds for compacting the bunds.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                     |
| 3. | Graded /Compartment Bunding | 10 | Pandav Umara | Washim | Washim | <p>Observations:</p> <ol style="list-style-type: none"> <li>1. Bunds were not constructed across the slope of the field. These were constructed along the boundary of the field and no intermediate bunds were observed.</li> <li>2. No outlets for draining out the excess water from the field were constructed.</li> <li>3. Proper size and shape were observed.</li> <li>4. Measurements were found as per the MB and it has properly maintained.</li> <li>5. As per farmer due to construction of the bunds, ground water level has increased.</li> </ol> <p>Suggestions:</p> <ol style="list-style-type: none"> <li>1. Outlets are essential for draining out the excess water; though water logged conditions may occurs during high intensity rainfall.</li> <li>2. Insists the farmers for constructing the intermediate bunds across slope.</li> <li>3. Top dressing and shaping should be completed at the time of completion of the work.</li> <li>4. Plantations should be done on the bunds for compacts the bund.</li> </ol> |  |



|    |                                           |    |       |       |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |
|----|-------------------------------------------|----|-------|-------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 4. | Desilting of old water storage structures | 10 | Akoli | Deoli | Wardha | <p>Observations:</p> <ol style="list-style-type: none"> <li>1. <i>Nala</i> Deepening and construction of 04 CNBs has been done.</li> <li>2. Site selections are proper and no damages observed during the visit.</li> <li>3. Constructions and quality of the works were found satisfactory, though proper cross measurement couldn't happen during the visit due to water availability in the Nala and the rainy season.</li> <li>4. All the measurements were recorded in the MB and it has properly maintained with signature and stamps of the higher authority.</li> <li>4. Water was available during the visit at all the sites. It was observed that, farmers were lifted and used the water during the season.</li> <li>5. As per interacted, farmers were satisfied and appreciated the work done under the project.</li> </ol> <p>Suggestions:</p> <ol style="list-style-type: none"> <li>1. Proper yearly maintenance should be done by the group of farmers benefitted through CNB.</li> <li>2. Height of the side bunds should be maintained properly.</li> <li>3. Plantations may be done along the side bunds to improve its compactness.</li> </ol> |  |
|----|-------------------------------------------|----|-------|-------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|

|    |                                    |    |                |                                    |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                     |
|----|------------------------------------|----|----------------|------------------------------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 5. | Graded /<br>Compartment<br>Bunding | 10 | Pimpri<br>Road | Kelapur<br>(Pandha<br>rkawada<br>) | Yavatmal | <p>Observations:</p> <ol style="list-style-type: none"> <li>Most of the bunds were constructed along the boundary of the field, no intermediate bunds were observed.</li> <li>Bunds were constructed properly; size and shape were observed satisfactory.</li> <li>Measurements were found as per the MB. It was properly maintained and updated with signature and seal of the higher authority.</li> <li>Bunds were not constructed across the slope of the field.</li> <li>No outlets for draining out the excess water from the field were constructed.</li> <li>It helps in increase in ground water level of the Dug well and Bore well in the area.</li> </ol> <p>Suggestions:</p> <ol style="list-style-type: none"> <li>Intermediate bunds should be constructed across the slope, it will help in minimizing the erosion and increasing the ground water level.</li> <li>Top dressing and shaping should be completed at the time of completion of the work.</li> <li>Outlets are essential; though soil type was black cotton therefore water logged conditions may occur. It should be constructed at lower part of the field, so that the excess water flows down.</li> <li>Plantations should be done on the bunds for creating the compactness of the bunds.</li> </ol> |  |
|----|------------------------------------|----|----------------|------------------------------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|

## Annexure-IV: Field Visit Report by Hydrology Expert

Name of the Village: Naya Akola (Distt. Amravati) on 26th September, 2022

1. **Profile/ General Discussions with the Farmers/HHs :** It was informed that there are 608 houses in the village. Total population of the village is 2784. Number of males is 1473 and number of females is 1311. Total geographical area of the village is 1293.19 hectares. Cultivable area is 1227 hectares for Kharif crop. Rabi crop is sown in 238 hectares. There are 1057 scheduled Caste and 107 Scheduled tribes. Total workers are 1307, out of which 793 are males and 514 Females. There are 672 farmers are land holders. Out of these 48 farmers are having land more than 5 hectares. Some of landless persons are working as farm labour in this and adjoining villages. There are 38 marginal workers. Some farmers are rearing goats from their own resources.
2. **Cropping Pattern :** The major crops sown in this area are soybean, cotton, urad, toor, grams, groundnut and wheat.
3. **Water Resources Management:** Farmers use water from the dugwells for drinking and irrigation. Farmers having no dugwell are dependent on rains only, for the irrigation. About 50% of farmers are using borewell. Water from the borewells is available between 70 - 140 feet depth below the NGL. Ponds are used for storage of rainwater.
4. **Soil Health/ Kharpan Region/Saline Affected Area:** The soil in this area is black cotton soil and Medium soil. Top cover of varying thickness is of black cotton soil resting over rocky strata. This village lies in kharpan area.
5. **Access to Market/ value chain:** The village is well connected with roads. Nearest town Amravati is at about 17 km.
6. **Sign Boards of the Project :** There was one sign board installed in the Gram Panchayat office of the village depicting the benefits available in the PoCRA project. There was no complaint box.
7. **Benefits Transferred to the Farmers:** Total 132 No applications received for pre sanctioning. Out of these 38 applications were cancelled for not fulfilling the eligibility criteria. 29 No applications are pending and total 65 No of farmers have been benefitted from the scheme by receiving the subsidy for following items:

II.

| Activities                  | Quantity |
|-----------------------------|----------|
| Sprinkler irrigation sets   | 39       |
| Seed Production             | 17       |
| FFS                         | 6        |
| Tractor, Trolley, BBF       | 2        |
| Godown construction to FPC  | 1        |
| Bamboo Plantation (Pending) | 1        |

Out of the above beneficiaries, one woman farmer and total three women have been benefitted.

- Losses due to Animal attack:** It was informed that *nilgais* (Blue buck) and deer from nearby forest areas attack their fields during night and destroy their crops. High fencing with or without electric current can be installed around the forest boundary or the cluster of farms (as may be economical) to avoid entry of wild animals into farms and subsequent damage to the crops during night.

### Major Observations, Issues and Recommendations

| S No | Activities              | Observations/Issues/Challenges                                                                                                                                                                                                                                                                                                                                                      | Recommendations                                              |
|------|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| 1.   | <b>Micro irrigation</b> | Increase in Yield due to Micro Irrigation. Some farmers, who have adopted sprinkler irrigation under the PoCRA project, informed that their water consumption had decreased and their crop yield had increased.                                                                                                                                                                     | More farmers should be encouraged to adopt micro irrigation. |
| 2.   | <b>Farm Machinery</b>   | Decrease in Cost and Increased Benefits due to Use of Machinery. The farmers informed that with the use of technology in agriculture their cost per acre had decreased by 6-7% and their yield of the crop had increased by about 20%. Hence farmers who don't own the machinery like tractor, BBF, etc. they too can utilize the machinery by hiring it and get the higher profit. |                                                              |



|    |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |
|----|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 3. | <b>Godown of FPC</b>     | NABCON Team along with officials of Agriculture Department visited the Godown of Krisham Agro Producers Company Ltd at Naya Akola. It is an RCC structure and completed in Jul 2022. Its area is 1200 sq ft and it had the capacity to store 100 MT grains. There was no sign board installed on the gate or front wall of the godown as it had yet to start its functioning. It was informed that the inauguration of the godown will be on 15 Oct 2022 and they will put the proper sign boards before that. The cost of the construction was Rs 14.90 Lakh and they have received the subsidy of Rs 11.17 Lakh. The FPC had 110 shareholders and have a plan to add 350 more shareholders. The Turnover of the company is about Rs 40.00 Lakh. They plan to expand in a big way into seed production / sale, fertilisers and agricultural marketing. The FPC will also rent out the space to the farmers for storage of seeds / grains. The FPC had an implement store, having two tractors, trolley and other implements, which are given to the farmers on rent. |  |
| 4. | <b>Tractor &amp; BBF</b> | House of Mr Pramod Nirmal was visited. He purchased a Swaraj tractor and a BBF for Rs 5.10 Lakh and got the subsidy for Rs 1.25 Lakh. Now he is able to use these in his own fields and other farmers can also hire these on hourly basis. Hence his income had increased.<br><br>Farm of Mr Arun Shankar Hive was visited. He had a 2 Acre farm and sown the soyabean crop with BBF. He had a good crop and increased profit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |
| 5. | <b>Bamboo Plantation</b> | Farm of Mr Amit Ram Bhau Tidke was visited. He had planted bamboo plants in part of his farm. These plants are planted along the centre of the thin strip of low land along the road. The plants are small and will need more care during rains. The helper of the farmer was optimistic about the success of plantation. If successful bamboo plantation would be adopted by other farmers also.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |

|     |                                             |                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                    |
|-----|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6.  | <b>SHG for Women and Disabled</b>           | There are 65 SHGs for women, 5 for disabled and 2 for widows. They are getting training in various activities and are able to get deposits of Rs 100/- per month per member.                                                                                                                                                                                  |                                                                                                                                                                                                                                    |
| 7.  | <b>Discussions regarding FFS, FPO, FPC.</b> | It was informed that FFS had been closed for the last 2 years. Now Agricultural Assistant is giving six trainings for each of crop (soybean and cotton). The AA had completed three trainings for each crop (soybean and cotton) to the farmers regarding from sowing to harvesting, seed treatment, pest and disease identification and spray of pesticides. |                                                                                                                                                                                                                                    |
| 8.  | <b>Seed Production</b>                      | Five farmers adopted for seed production of soybean and gram. Hiring of Agricultural implements /machinery is feasible now. They have no difficulty in the sale of their produce.                                                                                                                                                                             |                                                                                                                                                                                                                                    |
| 9.  | <b>PVC Pipes and Machineries</b>            | Major Popular Items are put on hold. Farmers informed that major items like electric pump / diesel pump, connecting PVC pipes, dugwells, and community ponds are put on hold now. Dug wells, Farm ponds and community ponds are also used as rain water harvesting structures and their water is used for irrigation. These items have been put on hold.      | Since the provision exist and if found feasible, construction of open dug wells, farm ponds, connecting pipes and pumps may be allowed with the condition that irrigation should be done through Drip / Sprinkler Irrigation only. |
| 10. | <b>Backyard Rearing</b>                     | Farmers are interested in goat rearing and poultry. As per farmers this activity had been put on hold. Some farmers have bought the goats from their own resources.                                                                                                                                                                                           |                                                                                                                                                                                                                                    |
| 11. | <b>Biofertilizers &amp; Vermicompost</b>    | There seemed to be lot of options for use of Biofertilizers / Vermicompost in these villages.                                                                                                                                                                                                                                                                 | Since a lot of farm waste and animal dung is available, there is a need to properly educate the farmers to convert this into biofertilizers. This will reduce their expenses on chemical fertilizers.                              |
| 12. | <b>Use of Solar Power</b>                   | Electricity issue was observed.                                                                                                                                                                                                                                                                                                                               | As electricity is available for lesser time, the farmers should be briefed about the solar power and schemes available for installing solar power at subsidized rates.                                                             |

|     |                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                      |
|-----|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 13. | <b>Helping Farmers through Knowledge and Finances</b> | It was observed that small farmers cannot get the full benefits of the project as either they do not know the total facilities available in the project or due to lack of funds to be invested before getting the available subsidy. Medium and big farmers may have sufficient money and hence can choose the scheme and invest from their own resources. They can afford to get the subsidy later on, whereas small farmers cannot do so. Accordingly, complete information of the project components be given to the farmers so that they can choose the suitable component. | A cooperative bank or financing institute may be roped in to help them for getting finances. This way small farmers too can get the full benefits of the Project.                                                                                                    |
| 14. | <b>Training to VCRMC</b>                              | There are 13 Members of the VCRMC. Regular meetings are held. No training had been given to VCRMC members.                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Training should be given to Krushi Tai and VCRMC members regularly to improve their functioning.                                                                                                                                                                     |
| 15. | <b>Training / Interaction with Farmers</b>            | Need for training and interaction was felt during the visit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | There is need to provide training / interaction with the farmers to apprise them about the Project, its components, various schemes regarding saving of water and energy, drip irrigation, sprinkler irrigation, solar power, biofertilizers, soil health card, etc. |

## Annexure-V: Field Visit Report by Agricultural-Economist Expert

Name of the Village: Naya Akola (Amravati) & Ghusar (Akola) on 26<sup>th</sup> & 27<sup>th</sup> September, 2022

### Major Observations, Issues and Recommendations

| S No | Activities                      | Observations/Issues/Challenges                                                                                                                                                                                                                                                                   | Recommendations                                                                                                                                                                                                                                                                                                                      |
|------|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.   | Physical and Financial Progress | Disbursement of various components under PoCRA at 65 in a village of 672 farmers and 162 in a village of 1800 farmers indicate a physical coverage of less than 10%. Maximum disbursement was under sprinkler (39) followed by seed plot (17), FFS (6), tractor+ BBF (2) and one godown for FPC. | Progress of disbursement under various components can be analyzed only if component wise/ village wise targets are indicated against disbursement. It is recommended that village wise secondary data on physical and financial targets vis-à-vis achievements be provided by the IA.                                                |
| 2.   | Village committee               | VCMRC had been formed and working well in the villages with representation of women, SC, ST, OBC, nomadic tribe groups. The committee was effectively deciding on the eligibility of applicants under PoCRA.                                                                                     | The VCRM concept may be retained and continued post PoCRA for channelizing various developmental projects.                                                                                                                                                                                                                           |
| 3.   | Seed production under PoCRA     | Seed production soyabean, moong and gram had emerged as an important CRT in the PoCRA villages.                                                                                                                                                                                                  | Encouragement of Seed production plots and distribution of improved seeds must be continued as an important CRT activity. JS9305 soyabean with BBF technology had reportedly reduced the seed and water requirement with 20% increase in yield.                                                                                      |
| 4.   | Sprinkler                       | Sprinkler irrigation had been the second most important CRT adopted by farmers.                                                                                                                                                                                                                  | Sprinkler technology need to be popularized more as a water saving technology to maximize GCA and as a crop saving technology capable of giving at least one protective irrigation to crops.                                                                                                                                         |
| 5.   | Cropping pattern                | Cropping pattern in the villages have been changed from sunflower and groundnut during Kharif to soyabean. Farmers also rotate green gram and cotton as a strategy to combat organic matter shortage in the soil.                                                                                | <ul style="list-style-type: none"> <li>Cropping pattern advisory need to be devised and disseminated to farmers incorporating contingent plans in case of delayed monsoon, long dry spell, water logging due to excess rainfall, etc. The contingent plan must have facility to supply seed to farmers at short interval.</li> </ul> |

|    |                               |                                                                                        |                                                                                                                                                                                                                                                                                       |
|----|-------------------------------|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    |                               |                                                                                        | <ul style="list-style-type: none"> <li>Organic matter content of dryland soils need to be improved as it raises water holding capacity and fertility of the soil. Cultivation of organic matter crops like <i>Glyricidia</i> on farm boundaries need to promoted as a CRT.</li> </ul> |
| 6. | Support for landless families | Out of 115 landless families in the village, 64 families had applied for goat farming. | Goat/sheep/poultry farming are livelihood activities undertaken by landless families in the dry land areas. Appropriate project interventions/livelihood activities for landless families need to be promoted as a CRT.                                                               |

## Annexure-V: Field Visit Report by Environmental Expert

Name of the Village: Naya Akola (Amravati) & Ghusar (Akola)

### Major Observations, Issues and Recommendations

| S No | Report Section                                   | Detailed Observations                                                                                                                                                                        | Recommendations (if any) |
|------|--------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 1.   | <b>Land Holding and Land Use Pattern</b>         | <p>More than 90% area is Kharpan Land</p> <p>Total Agriculture Area-271.55ha</p> <p>Net sown area- 265.2ha</p> <p>Forest-0</p> <p>Non-agriculture area-0</p> <p>Uncultivable area-5.65ha</p> |                          |
| 2.   | <b>Cropping Pattern</b>                          | <p>Kharif Crop- Cotton/Soyabean/Toor/Urad</p> <p>Rabi Crop- Gram, Wheat</p>                                                                                                                  |                          |
| 3.   | <b>Water Resources Management</b>                | <p>Rainfed Area</p> <p>Farm ponds</p> <p>Water depth- 60-70 feet</p> <p>Sprinklers available</p> <p>Drip irrigation available</p> <p>Drinking purpose- Dam water</p>                         |                          |
| 4.   | <b>Access to Agriculture Technology/Services</b> | <p>Tractor available</p> <p>BBF Planter available</p> <p>Sprinklers</p>                                                                                                                      |                          |

|     |                                                         |                                                                                                                                                                                                                                              |  |
|-----|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|     |                                                         | Climate Resilient seed variety is available<br>Seed Drought Tolerant variety (Gram-Rajrijan 202 and Soyabean MAUS 158)                                                                                                                       |  |
| 5.  | <b>Soil Health/ Kharpan Region/Saline Affected Area</b> | Villagers are using Soil Health Card for Soil testing<br>pH value is between 8-9<br>Total village area is Kharpan                                                                                                                            |  |
| 6.  | <b>Access to Market/ value chain</b>                    | Nearby market- Akola<br>APMC available<br>Benefit- Soyabean 6-8Qntl/Acre. Rs 3000 Avg.<br>Max Benefit-Soyabean Crop & Pigeon Pea                                                                                                             |  |
| 7.  | <b>Major Reported Issues in Agriculture</b>             | Bollworm pest infestation in cotton crop damaging 3-6 quintals crop<br>Wild animal attack- Deer/ Nilgai<br>Water availability is the biggest problem in term of ground water depth<br>Soil Salinity<br>MSP is another concern of the farmers |  |
| 8.  | <b>Allied Sectors</b>                                   | Previously existing schemes : ATMA, PMGSY                                                                                                                                                                                                    |  |
| 9.  | <b>Awareness about PoCRA Project Activities</b>         | Villagers are aware about the PoCRA Project and its related activities viz., distribution of seeds, training, farm machinery.                                                                                                                |  |
| 10. | <b>Awareness about Climate Change</b>                   | Villagers are only aware about the drought tolerant seed variety but they are unaware of issues related to                                                                                                                                   |  |

|     |                                                      |                                                                                                                                                             |  |
|-----|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|     |                                                      | climate change such as flooding, drought occurrence and heat waves.<br>Crop weather advisory received through mobile phones.                                |  |
| 11. | <b>Awareness on Environmental Aspects</b>            | Villagers are majorly concern about the environment and they protect forest, water and soil conservation.                                                   |  |
| 12. | <b>Discussions with SHGs</b>                         | Currently3 SHG is existing in the villages. SHG has taken training under Farmer Field School (FFS) on organic farming conduct by the Agriculture Department |  |
| 13. | <b>Discussions with VCRMC/ TAO/Project officials</b> | VCRMC- Present in the villages<br>VCRMC is conducting monthly meeting<br>Conducting need based training                                                     |  |
| 14. | <b>Discussions with FPC/ FPO</b>                     | FPO-Present in the villages<br>Women farmer group-3<br>No-FPC                                                                                               |  |
| 15. | <b>Discussion with Women Farmers/Gender Aspects</b>  | Women framer group in the village conducting training on soyabean/cotton                                                                                    |  |
| 16. | <b>Farmer Field School Discussions</b>               | FFS is conducting training for farmers on various issues such as water conservation, organic farming and soil testing                                       |  |



|     |                                                       |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 17. | <b>Discussions on Sanction/Status/DBT Application</b> | <p>DBTs in the village</p> <p>They have received PVC, Motor, Sprinkler and cash through online.</p>                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 18. | <b>Feedback on the project from Farmers</b>           | <p>Villagers have lot of expectation from PoCRA and they are waiting to receive more benefits out of it. According to the discussion, PoCRA is very beneficial to the farmers. It should expand in entire village covering maximum beneficiaries.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 19. | <b>Recommendation</b>                                 |                                                                                                                                                                                                                                                       | <p>Farmer in the villages of Akola should be encouraged for planting agroforestry crop and Horticulture plantation as there is no tree available at the bund in Akola. Farmers are also afraid of Monkeys for destroying their crops.</p> <p>Farmers should also be given training on applying pesticides. How much volume should be given and PPE should be used by the farmers on the field. Hazardous chemical should be avoided as it is recommended by the World Bank.</p> <p>Farmers and Cluster Assistants are not trained in Climate Resilient Techniques therefore CRT training need to be planned for these groups.</p> <p>Villagers are only aware about the drought tolerant seed variety but they are unaware of issues related to climate change such as flooding, drought occurrence and heat waves. Crop weather advisory received through mobile phones.</p> <p>Villagers are majorly concern about the environment and they protect forest, water and soil conservation.</p> |



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