Concurrent Monitoring - Round 2 Report

Monitoring and Evaluation for PoCRA in Marathwada Region, Maharashtra

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Project on Climate Resilient Agriculture (PoCRA)

Submitted By

SAMBODHI

In Association With

teri The Energy and Resources Institute

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Abbreviations

AA	Agriculture Assistant
ATMA	Agriculture Technology Management Agency
BBF	Broad Bed Furrow
CA	Cluster Assistant
CDC	Capacity Development & Coaching
DBT	Direct Beneficiary Transfer
DPA	Drought Prone Area
DPR	Detailed Project Report
FGD	Focus Group Discussion
FFS	Farmer Field School
FPO/ FPC	Farmer Producer Organization/ Farmer Producer Company
GHG	Green House Gas
GSD	Geological Survey Department
IDI	In-Depth Interview
IPM	Integrated Pest Management
MIS	Management Information System
NBFC	Non-Banking Financial Company
PDO	Project Development Objective
PMU	Project Management Unit
PoCRA	Project on Climate Resilient Agriculture
PS	Project Specialist
SDAO	Sub-divisional Agriculture Officer
VCRMC	Village Climate Resilient Management Committee
WB	World Bank

Executive Summary

Maharashtra government, in collaboration with the World Bank is implementing Project on Climate Resilient Agriculture (PoCRA) to enhance climate-resilience and profitability of smallholder farming systems in selected districts of Maharashtra. The project is built around a comprehensive, multi sector approach that focuses specifically on building climate resilience in agriculture through scaling up tested technologies and practices. Sambodhi in partnership with TERI is conducting M&E of PoCRA in all eight districts of Marathwada region. As part of the monitoring and evaluation of the project, one of the key components is to conduct concurrent monitoring of the project, which will be conducted bi-annually in a period of six years. Concurrent monitoring aims at finding out what are the bottlenecks in implementation of each project component and also suggest solutions for the same. It also aims to get beneficiary feedback on the key processes of the different project components. Further, concurrent monitoring also aims to assess the progress of the project on key results frame indicators which are measurable through concurrent monitoring rounds. The first concurrent monitoring was conducted from start of the project till 31st March 2019. This round i.e. the second round of concurrent monitoring has considered the period from 1st April 2019 to 30th September 2019.

The key components of the project that were assessed in the second round of concurrent process and progress monitoring viz. Individual matching grants accessed using the use of Direct Beneficiary Transfer (DBT) application, Farmer field school for demonstration of climate-resilient and sustainable farming practices, construction of community assets which are aimed to benefit the farming community of the area, Farmer Producer Organisations for strengthening post-harvest and value chain strengthening activities. Also, feedback was taken on VCRMC functioning, Krushitai functioning and the support received and expected by the FPOs/FPCs. Satisfaction in project planning, micro planning, with VCMRC, with support from project staff, with government schemes was also evaluated in the project and control villages. The project MIS data for the aforementioned period was also analyzed to understand the progress of the project activities during this period. The study area comprised of eight districts of Marathwada region of Maharashtra viz. Aurangabad, Beed, Nanded, Hingoli, Latur, Osmanabad, Parbhani and Jalna.

Mixed-methods approach has been adopted for concurrent monitoring survey as part of which we have interviewed respondents from project area and also from comparison areas where beneficiaries of similar interventions were interviewed. Quantitative survey tool for the beneficiaries and qualitative interview schedules were finalized in discussion with PoCRA PMU team. Round II concurrent monitoring survey was conducted in 27 project and 14 comparison villages. The purpose of beneficiary survey tool was to get the feedback of project beneficiaries on PoCRA and also to get feedback of beneficiaries of similar interventions in comparison villages. A sample of 615 beneficiary respondents was targeted for the quantitative survey and a sample of 635 beneficiaries has been covered. Also, as part of qualitative component, 27 FGDs with VCRMC members, eight with Project Specialists; and key-informant interviews of 10 SDAOs, 23 Cluster assistants, 25 Agriculture assistants, five DSAOs and 14 FPC/FPO members were conducted. These were administered to get their feedback on project implementation, understand the key challenges in project implementation and suggest appropriate solutions along with other relevant areas of interest. The sample shortfall in a few cases was due to unavailability of the stakeholders for the survey even after two follow-ups.

Key Observations and Findings

On assessment of cultivation practices of the beneficiary farmers, it was observed that almost all the farmers (91% in project arm and 98% in comparison arm) owned land. The major crops cultivated in Kharif are reported as soybean (55%), cotton (46%) and pigeon pea (18%). The key crops cultivated in

Rabi were chickpea (31%), sorghum (18%) and wheat (19%). 87% of the surveyed project beneficiaries and 89% of the surveyed comparison beneficiaries reported of having access to irrigation facilities, thought regular availability of water from these sources is a big challenge. Dug well and borewell were reported as the main sources of irrigation. It was found that the highest area under cultivation using climate resilient certified seed varieties was chickpea (Project: 62%; Comparison: 73%) followed by soybean and pigeon pea. The overall use of certified seeds was reported to be 44% in project area and 55% in comparison area.

On assessment of sources of information about PoCRA and similar benefits in comparison arm, project staff (55%), gram sabha (48%) and VRCMC (16%) were reported to be the key sources of information in the project arm. However, in the comparison arm, gram sabha meetings (39 %), project staff (56%) and friends and relatives (15 %) were reported to be key source of information. In respect to the use of DBT portal, the highest awareness was for the stages *Registration on DBT portal* reported by 82% respondents and *application for matching grant, reported by* 59%. It can be observed that the awareness of the respondents about the in between steps leading to the final step i.e. *disbursement of matching grant* was not very high. This was also understood from qualitative findings as the beneficiaries usually take support of the project staff, gram panchayat operations or e-seva kendra in filing their application and thus are not themselves aware of the entire process. On assessing the awareness of different benefits that can be accessed under PoCRA, the maximum awareness was for purchase of water pumps/pipes/drip irrigation systems or sprinklers (85% beneficiaries were aware about the same) , construction of artificial recharge of open well, farm ponds (59%) and protected cultivation was at 26%. Awareness of other benefits under PoCRA, specifically community benefits were observed to be low and needs to be focused during the further course of the project implementation.

In the beneficiary sample, the benefits that are most popular are related to irrigation and increasing water availability, such as drip (15%), sprinkler (21%), pipes (22%), water pumps (16%). Other benefits applied for were small ruminants (8 %), and agroforestry (6%). The biggest motivators for applying for benefits under project are project staff (comprising of AA, CA and other project staff) in project areas at 53% and self-motivation at 47% in the comparison villages. Self-motivation, VCRMC members and gram panchayat members in project villages were reported as the key motivators with 31%, 26% and 16% respondents saying that they had motivated them to apply for benefits under PoCRA.

The reason to apply for benefits mainly lay in increasing production or increasing water supply for cultivation. 54% of the respondents from the project area and 58% from the comparison area said that they had to incur extra costs for accessing the benefits. When asked for type of costs, the response was similar across project and comparison area. Maximum cost was reported to be incurred in documentation, transportation and loss of wages. When asked how the process could be made easier for application through DBT, 30% beneficiaries reported that matching grant should be increased, 15% requested support in filling the application, 9% required documentation process in application to be simplified and 14% stated that the process of applying and getting benefits needs to be simplified. Also, 29% of the beneficiaries were satisfied with the current process. The beneficiaries in both project and comparison arm were enquired if they had faced any challenge in accessing project benefits. Only 20% of beneficiaries from project areas and 29% beneficiaries from comparison areas stated that they faced issues while trying to access benefits under different schemes. When enquired if the timeline for completing the project activity or creating the asset is sufficient, 89% respondents from the project arm and 85% respondents from the comparison arm reported the timeline to be sufficient.

When the FFS beneficiaries were enquired about the reasons for participating in demonstration sessions, 66% respondents participated to learn new technologies in agriculture and 67% with the expectation that it will help to increase their agriculture production. From the farmers who participated in the FFS demonstrations, 80% reported that they had attended all sessions. The reasons given by the remaining 20% farmers for not attending all FFS trainings are that they had personal work (56 %) or that they did not find the session useful (17%). The climate resilient technologies, most frequently demonstrated as part of FFS, as reported by AA were BBF Technology, Inter-cropping, INM, seed treatment and fertiliser spraying techniques.

It is encouraging to observe that 87% of FFS beneficiary respondents acknowledged that they have benefitted from attending FFS sessions. Awareness of good agriculture practices (61%), better awareness of use of inputs (60%), better soil health (23%), less diseases in crops (26%) and increase in yield (43%) are the key perceived benefits. The effectiveness of the FFS was further measured against its perceived help in dealing with climatic vulnerability. 87% of the farmers perceive that the technologies demonstrated in FFS are useful in dealing with climate vulnerability. Use of improved seed varieties, seed treatment , use of climate resilient seed varieties, use of drip irrigation, INM , BBF and increasing water availability through farm pond were the measures which were reported to be adopted by farmers to mitigate the impact of climate change. 92% of beneficiaries from project arm and 90% from comparison arm beneficiaries were found to have adopted atleast one of the climate resilient agriculture technologies. The percentage of beneficiaries adopting the technology after training is higher for project area (36%) than comparison area (24%). For the technologies demonstrated in FFS sessions, the adoption rate of atleast one technology by guest farmers was found to be 81%.

While assessing the implementation status of the community NRM works it was observed that NRM works were being implemented only in one of the sampled project villages. The project village is planning to build gabion structures. Also as understood from the stakeholder interactions, more thrust needs to be given to expedite the implementation of community works under PoCRA. When enquired about the stakeholders involved in decision making related to asset construction, in project area, VCRMC and Gram Sabha members have been more involved. 80% beneficiaries from the project arm were aware of the asset construction in their village and the same percentage was also willing to contribute towards its maintenance. The beneficiaries were mostly willing to provide support in the form of being the member of the structure maintenance committee (50%) and providing labour support (38%). Though, a low percentage of responds reported to be willing to pay for maintenance (13%) of the assets. In case of comparison arm where all the assets were completed, 67% of the beneficiaries reported to be involved in maintenance of the asset. In the comparison arm, from the beneficiaries who acknowledged to be involved in the maintenance of the assets, 26% of the beneficiaries are part of the structure maintenance committee, 36% have paid for maintenance while 31% contributed in the form of labour. When asked about the usefulness of the community assets, 70% of the respondents from project area said they believe that the gabian structure would be useful for them.

Similar to the feedback of NRM community asset, feedback was taken from beneficiary respondents of community farm pond. When asked who had motivated them to apply for community farm ponds, in the project area, 40% applied due to self-motivation, 51% reported to be motivated by project staff like AA, CA and Krushi tai and 31 % by VCRMC members. For applying for the community farm pond benefit they were mainly assisted by self/family members (36%), e-seva kendras (27%), with help of CA(18%) and with help of VCRMC members(14%). For the construction of community farm pond, in project area, 44% used their own funds, 33% took money from a money-lender, 28% took loans from their family or friend and only 11% took loan from bank or MFIs. Lack of availability of funds currently and in process of arranging funds were the two main reasons reported by beneficiaries who had received presanction

but had not started their work. It was encouraging to find that 86% of the project arm respondents reported that they did not face any issue in following the PoCRA guidelines for construction of community farm pond.

Providing support to FPOs/FPCs for post-harvest management and value chain promotion is one of the key components of PoCRA. In this regard, members of the FPOs who have applied for PoCRA support were surveyed. The main activities the FPOs were engaged in were mostly aggregation of produce (73%) and provision of agricultural inputs (66%). 39% said that their FPO assisted them in access to market while 39% also said that their FPO was also involved in value-addition of produce. 55% of the farmer members were aware of financial support provided by the project their FPO. The members were further enquired about the utilization plan by their FPO if they received support from PoCRA. 52% said they their FPO would purchase machines for value-addition. This indicated that the FPOs see the market value of processed produce. 30% said they would construct a building for their FPO and 7% would purchase land with their support. It was found that almost all the FPO's were in the application stage and they were waiting for grant to be received. Most of the FPOs have applied for grants to build their godown (also evident from the MIS analysis) and for purchasing food processing machinery for soybean, corn, black gram, and green gram. Some of the other activities for loan is applied includes seed processing, agri-equipments like rotavator, thresher, tractor, plough and chaff cutter. The loan application amount ranged from INR 20 lakhs up to 1INR Crore with the average loan amount of INR 60 lakhs.

Feedback of the beneficiaries was also taken on the micro planning process and also about different parameters related to implementation of PoCRA. Only 27% of the respondents were aware of microplanning done in their village and out of those who were aware, 48% reported that they or their family member had participated in the micro planning process. Also, 73% respondents believe that VCRMC represented all sections of their society with 79% being satisfied with their work. Also 78 % of the beneficiaries were satisfied or very satisfied with the process of accessing project benefits as compared to 70% in the comparison area. Also, 71% in the project arm were satisfied or very satisfied from the support received from project staff as compared to 63% in comparison arm. Therefore, it can be safely said that satisfaction of beneficiaries from PoCRA support is better that of beneficiaries if similar interventions in non PoCRA villages.

On looking at PoCRA beneficiaries from an inclusivity lens, 97% of the respondent beneficiaries in project and 98% in comparison arm identified themselves as Hindus, 15 % beneficiaries in project and11 % in comparison arm were women, and 83% in project and 88% in comparison arm reported agriculture as their main occupation. The average annual income per annum, is observed to be INR 1,16,884 in project arm and INR 1,01,305 in comparison arm. The distribution of caste was almost similar across both the study arms with approximately 68-71% from the general category, 10-13% from OBC and the remaining from Scheduled caste and Scheduled tribe.

We further enquired into the functioning of the VCRMCs. It was found that majority of the VCRMCs (24 out of 27) have been constituted as per the project guidelines. The surveyed VCRMC's overall had 20 % SCs , 7% STs, 16 % NT/VJNT and 53% women members. VCRMC meetings were found to be conducted mostly once in a month and on average 9 members were found to have attended the last meeting. The main topics of discussion in the meeting were review project progress in their village, guidance to farmer and approval to application of the farmers etc. Further trainings that VCRMC members want to receive include refresher training on project components, training to identify which type of benefit should be suggested to whom and training on agriculture technologies/benefits provided under PoCRA. The key documents maintained by VCRMC were meeting and proceeding book (available in most of the cases), visit register and cash book (mentioned in few cases) , cheque book (in few cases) and documents related

to individual applications. Many VCRMC members were not aware about the nine types of registers to be maintained. VCRMC members reported of motivating the farmers who have received pre sanction but are not implementing the activity by understanding the problems they are facing and guiding them to procure material, helping farmer to procure material on credit from dealer and facilitating credit support where possible. On verifying the status of complaint box and complaint registers, out of the 27 VCRMC visited, complaint boxes were found installed in 14 villages and nine had complaint register.

Out of the 27 sampled project villages, Krishi Tai has been recruited in 24 villages. Their key tasks that they were aware of included mobilizing women for SHG meetings, creating awareness through home visits, motivating people to take up project benefits, and providing advice on efficient water use. Eleven Krushi tai's reported to have mobile handset with them and majority of them reported that their husband, father in law or brother help them in their work. Also, only Krushi Tai had reported of receiving her honorarium till now. For further strengthening the role of Krushi tai in the project, it is suggested that proper orientation, early training of Krushi Tai and timely remuneration would ensure efficient work carried out by them. Support of Krushi Tai can be very critical in ensuring better participation of women farmers in FFS sessions.

Analysis of the project MIS data was also done to present key insights and the progress of the project. As per the PoCRA MIS data, a total of 1,13,466 beneficiaries have registered between the time period of 1st April 2019 to 30th September 2019. On analyzing the registrations based on landholding of farmers it is found that 42.8% of the registrations are from small farmers, followed by 32.7% by marginal farmers and 14.3% from landless. Further, the MIS data shows that 60.7% of the applications are at the preparation phase or pre-sanction Desk 1. Around 2 to 13% of the applications from a certain district have reach Sanction Desk 4, the final phase of application. Maximum applications are received for pipes (14.9%), water pumps (14.2%), small ruminants(13.7%), horticulture plantations (12.1%), drip irrigation (11.3%) and construction of open dug wells (8.1%). Out of all the applications received, only 6881 disbursements have been made in this time period of reporting with the highest number of disbursements in Aurangabad (2882) and lowest in Nanded (196).

VCRMCs have been formed in 1568 out of 1575 Gram Panchayats. Further, it can observed that Krishi Tai's have been appointed in 67.9% of the villages. A total number of 1434 FFS in Kharif and Rabi Season of 2018 and 3450 FFS in the Kharif Season of 2019 have been conducted. A total of 24 FPOs and 19 SHGs have been provided with pre-sanctions worth INR 1251 lakhs and INR 399 lakhs respectively. Maximum amount and investment is requested for in case of FPOs is in setting up of godowns. A total of 8 pre-sanctions have been made worth INR 477 lakhs. A substantive amount of INR 255 lakhs and INR 151 lakhs has been requested for 5 projects in cleaning and grading processing centres and 6 custom hiring centres respectively. In case of SHGs, highest sanctions have been given to custom hiring centres with 12 pre-sanctions worth INR 196 lakhs, followed by 5 pre-sanctions of Godown worth INR 158 lakhs.

Promotion of production of climate resilient seed varieties is an important component of the PoCRA project. Different improved and climate resilient varieties have been identified and these varieties were made to be locally grown by identifying suitable farmers. From the MIS data, it can be seen that soybean is the dominant crop for seed production in Kharif 2018 and 2019, comprising of 96% of the seed production in both the years. Gram is the most popular crop for seed production in the Rabi Season of 2018, comprising of 88.3% of the total production of seeds.

Key challenges and actions suggested

Though the project beneficiaries have largely reported to be satisfied with the support received from project stakeholders, but one of the key objectives of concurrent monitoring is to identify the challenges faced in implementation and suggest solutions for the same. For this, interview with key project stakeholders and expert visits were conducted. For individual matching grant component, difficulty in arranging funds by potential beneficiaries for upfront payment was reported to be the most critical challenge. The experts based on their field visit also suggested that it is important to ensure that the poorest of the poor beneficiaries do not fall in the debt trap. As a solution it is suggested to introduce mechanism through which bank loans can be facilitated for applicants who have received pre-sanction. Difficulty in application through DBT portal due to network issue is another challenge. For this the offline module needs to be strengthened so there is lesser lag in processing applications. High workload of project staff was also reported by mostly all project staff surveyed. For this it is suggested that the workload of the staff should be assessed, and appropriate measures must be taken to motivate and support them. A couple of activities were suggested to be added by beneficiaries and stakeholders under individual benefits which include matching grant for boundary wall protection to farm pond, matching grant for solar energy pumps, matching grant for farm fencing, to develop individual level storage infrastructure etc.

The key challenge in the implementation of FFS was reported as lack of awareness and lack of motivation amongst farmers to adopt new technologies. As a solution, it was suggested continuous efforts should be put to motivate farmers and explain them benefits of adopting improved agriculture technologies. Exposure visits and interaction with progressive farmers adopting these practices and visit to KVK centres can be helpful in the same. Separate FFS sessions for women farmers can be explored to increase their attendance. Large amount of information required to be entered in FFS application was a challenge reported by FFS facilitators and it is suggested that FFS application should be reviewed to rationalize the information to be captured so that facilitators can concentrate on demonstrating the session to the guest farmers rather than filling information in the application. Capacity of FFS facilitators (lack of practical knowledge) was reported as a challenge by the FFS co-ordinators and SDAO's for which more efforts/trainings are required to build their capacity. It was suggested that retired agriculture department staff wherever interested can be recruited to conduct the FFS sessions. It is also important to ensure that the inputs for conducting the FFS sessions are provided on time.

As NRM community works were mostly in planning phase, it is suggested that there should be a push to expedite the pace of NRM works. It was also reported that the villages have limited suitable sites for major activities of soil and water conservations such as check dams and earthen nala bunds. In regard to this, expert visits suggested that along with creating new structures the project should also focus on rejuvenating the existing watershed structures which are in dilapidated condition. As constructing community farm pond involves large initial investment from the beneficiaries, it is important to ensure that there is minimum time lag in processing their matching grant. Improper site section during micro planning was also reported as a challenge for which it is suggested that it should be done more diligently while ensuring that a technical person in definitely part of the micro planning team

The major challenge reported by FPOs was difficulty in arranging bank loan. The support from PoCRA which can help them to achieve their objectives include facilitation support to avail bank loan, capacity building trainings on financial management and technical training on the value addition activities that can be taken up them. Also, some other bottlenecks were identified during by the experts during interaction with the management of two FPOs. FPOs did not have any action plan or roadmap which is required for business planning and growth. Further, board of directors of the FPO do not have the bandwidth and capacity to take forward business planning. Developing market linkages, financial management, arranging working capital were some other challenges faced by the FPOs. It is suggested that the project

supported FPOs can be capacitated by providing the SIYB training (ILO module) to the board members which will help them to build their capacity to manage their operations effectively.

1. Project Background

Having agriculture as the primary source of livelihood in the state, Maharashtra has 22.6 million hectares of land under cultivation (gross cropped area) and 5.21 million hectares under forest. About 84% of the total area under agriculture in the state is rainfed and is dependent only on monsoon[1]. 49% of the landholdings in the state falls in marginal category, with less than one ha land. Most of these poor farmers with small and unirrigated land holdings are vulnerable to climate shocks. Moving these farmers out of the current crisis of high production cost, low profitability due to low productivity, lack of market access is one of the biggest challenges for the state. Also, the critical issues related to water scarcity, degraded land resources, increased cost of cultivation and the impacts of climate change need to be addressed to reduce the vulnerability and improve profitability of the smallholder farmers.

To respond to the above-mentioned challenges, the Government of Maharashtra, in partnership with the World Bank, conceptualized the Project on Climate Resilient Agriculture (PoCRA) for 5142 villages in 15 districts of Maharashtra. This project attempts to bring transformational changes in the agriculture sector by scaling-up climate-smart technologies and practices at farm and (micro) watershed level, that would contribute to drought-proofing and management of lands in states' most drought and salinity/sodicity-affected villages. The project focuses on smallholders (farmers up to 2.0 ha of farmland) with focus on vulnerable population whose livelihood is impacted by changing climate conditions and climatic uncertainties. The project has been implemented in 15 districts in Maharashtra which include 8 districts of Marathwada (Aurangabad, Nanded, Latur, Parbhani, Jalna, Beed, Hingoli, Osmanabad), 6 districts of Vidarbha (Akola, Amravati, Buldana, Yavatmal, Washim, Wardha) , Jalgaon district of Nashik Division and approximately 932 salinity affected villages in the basin of Purna river spread across Akola, Amaravati, Buldana and Jalgaon districts[2]. The below figure highlights the villages where the project is implemented. This project will be implemented over a period of 6 years from 2018-2024.

[1] Source: PoCRA Project Implementation Plan (PIP) document
[2] Source: Terms of Reference

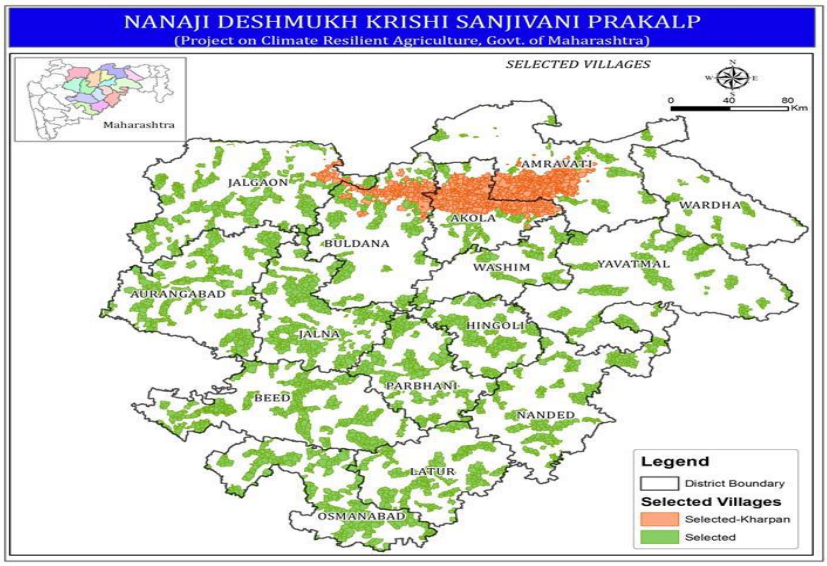
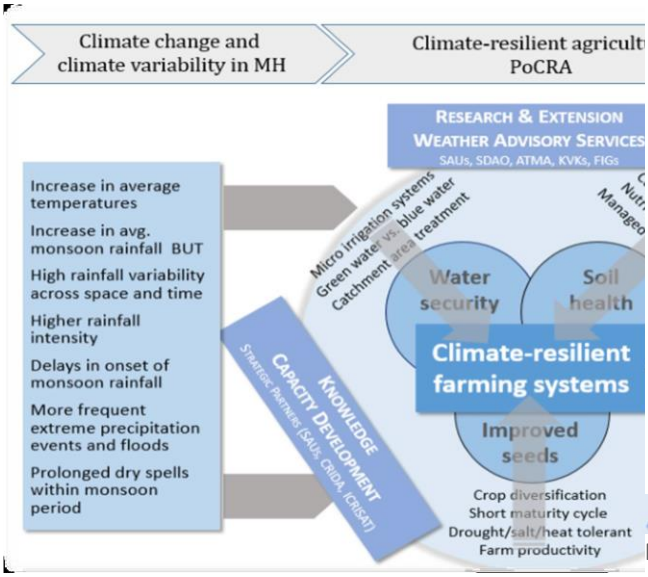


Figure1: PoCRA project area and villages

The Project Development Objective (PDO) of PoCRA is to enhance climate-resilience and profitability of smallholder farming systems in selected districts of Maharashtra. The project is built around a comprehensive, multi sector approach that focuses specifically on building climate resilience in agriculture through scaling up tested technologies and practices. The strategic overview, thematic linkages and expected achievements of the project are highlighted in the below schematic.

FIGURE 2: PoCRA STRATEGIC OVERVIEW, THEMATIC LINKAGES AND EXPECTED ACHIEVEMENTS

The overall project vision is to contribute towards three critical impact areas: a) Water Security b) Soil Health c) Farm Productivity and Crop Diversification.



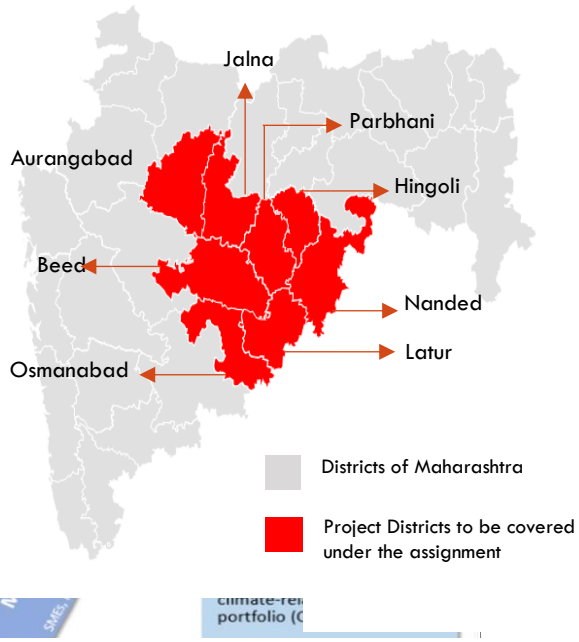


FIGURE 3: PROJECT DISTRICTS

The need for intervention across these three areas in the region is evident given the type of agro-climatic attributes of the area. Out of the 15 districts where PoCRA will be implemented, the current assignment is to be conducted in 8 districts of Marathwada region, covering 347 mini watershed clusters. The project will be implemented in a phased manner reaching out to 70 cluster in year I, 175 clusters in year II and 102 clusters in year III. The below table provides the detail of this phased implementation of the project in Marathwada region. The subsequent sections provide an overview of the demographic and agro-ecological attributes of this region while contextualizing the broader discourse of resilience.

1.1 Overview of the Study Area

About one-sixth of the total topographical region in India falls under the Drought Prone Area (DPA) and about 40% of the Maharashtra State falls under DPA, with less than 750mm of the annual average rainfall[3]. In Maharashtra, Marathwada region specifically has been floundering under drought condition since 2012 with the highest rainfall deficit in the country at 48% in 2014. Marathwada region coincides with Aurangabad Division and consists of 8 districts namely: Aurangabad, Beed, Latur, Osmanabad, Parbhani, Jalna, Nanded and Hingoli.

The region has a population of about 1.87 Crores and a geographical area of 64.5 Thousand sq. kms[4]. Agriculture is the major source of income generation for over 64% of the state's population. However, given harsh weather conditions, the region's agricultural system has been depleting significantly. Jowar and Bajra, along with other kharif crops, were completely wiped out in 2012 when monsoon failed (Kumar, Mail Online India, 2013). Jalna district, famous for being the biggest producer of sweet lime, had been the worst hit in the drought. Two important cash crops in Marathwada namely cotton and sugarcane were also severely affected. The anticipated impact of climatic change as well as climate variability presumably lead to an increased pressure on already scarce water resources.

Starting 2014, the Jalyukt Shivar Abhiyaan, one of the state government schemes started its intervention to make the state drought-proof by 2019. It aimed to make 5,000 villages free of water scarcity every year through deepening and widening of streams, construction of cement and earthen stop dams, work on nullahs and digging of farm ponds. A total of 158,089 water management works were to be carried out under this project, of which 51,660 have been completed till April 2018. This demonstrates that there is a need of more concentrated efforts for mitigation and adaptation with an aim to reduce vulnerability of agriculture and making it more resilient.

Within this context, there is an urgent need for the farmers to enhance their resilience to the threats of climate variability. The fact that most of famers in the project region are small and marginal, their adaptive capacity is very limited hence economically viable and culturally acceptable adaptation techniques need to be developed and implemented. The Government of Maharashtra has realized the implications of building climate resilience in the agricultural sector and has developed a drought proofing and climate resilient strategy as a long-term and sustainable measure to address the likely impacts of climate change. With this backdrop, the Project on Climate Resilient Agriculture (PoCRA) has been formulated by the Government of Maharashtra with support from World Bank. This is the first large scale climate resilient agriculture project in India which aims to enhance climate-resilience in agricultural production systems through a series of activities at the farm level.

[3] Hydrology and Water Resources Information System for India, National Institute of Hydrology, Roorkee
http://nihroorkee.gov.in/rbis/India_Information/draught.htm
[4] Census 2011, http://shodhganga.inflibnet.ac.in/bitstream/10603/152935/11/11_chapter%204.pdf

2. Objectives of Concurrent Monitoring of PoCRA

Along with evaluating the impact of PoCRA, the other key objective of the assignment is to conduct concurrent progress monitoring of PoCRA for its implementation in Marathwada Region. The objective of concurrent monitoring is to assess the progress of the project on key performance parameters. Concurrent monitoring also aims at finding out which are the key components of the intervention that are effective, what are the process bottlenecks in the implementation of the project and to get feedback of the key stakeholders on the implementation so that it can be improved during the course of the project implementation. Lastly, concurrent monitoring will also aim to validate the veracity of the MIS data by validating the information in the MIS progress reports.

3. Overarching Monitoring Framework

The framework below presents the overarching approach that has been adopted for the concurrent monitoring of PoCRA:

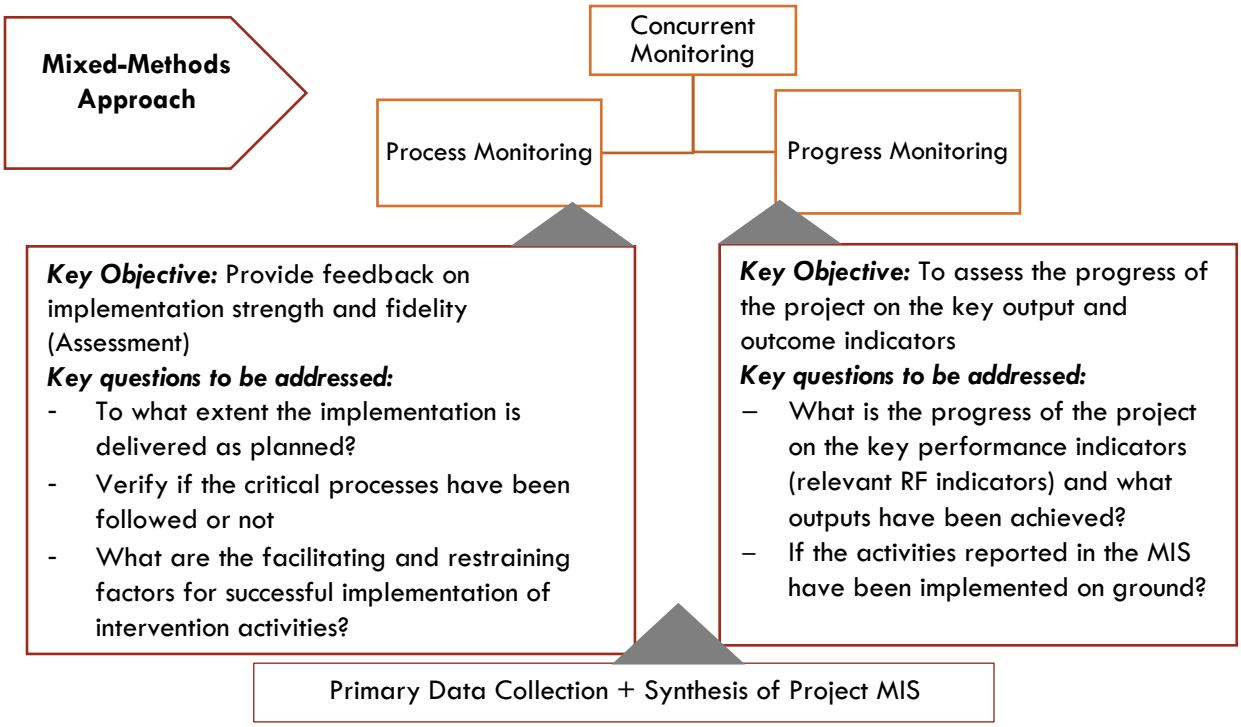


Figure 4: Overarching methodology

4. Methodology

The steps in the approach for concurrent monitoring are as follows.

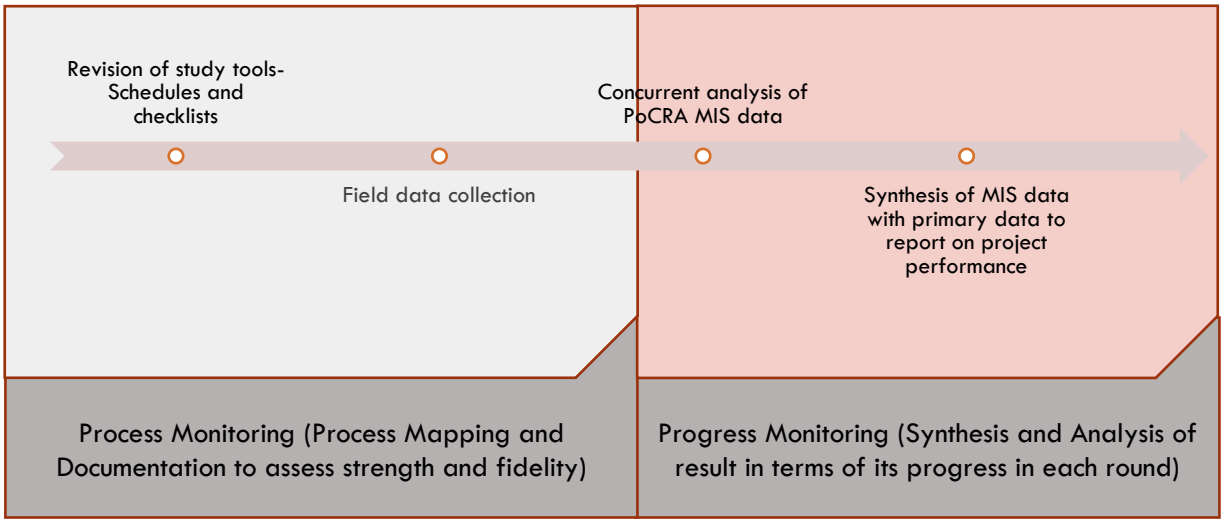


FIGURE 5: CONCURRENT MONITORING METHODOLOGY STEPS

A. Sample selection and process listing

ToR provides the project development objectives along with the list of activities planned to be conducted within the project areas. However, given the phased approach to implementation, it is expected that the activities will be carried out in phases, across districts and clusters. Therefore, as a first step, the sample for concurrent monitoring was selected (in line with the proposed sapling methodology). Subsequently the processes that are being implemented and would need to be monitored were listed. Discussion with PMU team and secondary literature review of relevant documents was done to understand these key processes.

Also, during the process listing, we interacted with PMU and other relevant stakeholders to list and understand the ongoing schemes or projects of similar nature in the comparison areas so that a premise for assessment could be built.

Based on the processes to be monitored which were identified during CM Round I, the study tools i.e. schedules, and checklists were developed in Round I, as also mentioned below.

Structured Interview Schedule	Interview schedule were developed for respondent survey and include questions relating to the access to intervention, processes, respondent's participation, perception and feedback on activities. As part of the beneficiary survey, physical observation of the in progress and completed activities will be done.
Key-informant Interview Schedule	The project activities are being carried out at various levels, including individuals, community (village or cluster) as well as district level. Key informant interviews will be conducted with key stakeholders involved in implementation of the project to get their feedback on project implementation and further improvement of the program.
Focus Group discussion schedule	Focus group discussions will be done with VCRMC members and Project specialists of particular districts to investigate the current status of implementation of the project and get feedback on project implementation and further improvement of the program.

The research tools developed in Phase I will be revised based on the suggestions of PMU team and based on the project requirement. The primary data will be collected based on revised research tools.

B. Concurrent Analysis of PoCRA MIS Data

For monitoring the progress of the project, the MIS data which reports on the progress of activities and outputs is analysed to see if the project implementation is going on as per its planned pace. The project performance is assessed on the key performance indicators including the results framework indicators which need to be assessed on a semi-annual or annual basis. For this, queries or the relevant indicators on which data is required have been identified and the PMU MIS team and other relevant stakeholders were contacted to obtain this data. Component and geography wise analysis is done to identify the leaders and laggards in the project implementation.

C. Synthesis of MIS data with Primary data to report on project performance

As a last step, the MIS data on the project progress and the primary data on the quality and feedback of implementation (from stakeholder interviews and beneficiary interviews) is synthesized to report on the status of implementation of the project at that point of time. The concurrent monitoring reports highlights the activities/processes for which the implementation quality needs to be improved. It also aims to identify the challenges or bottlenecks in implementation. The overall objective of the bi-annual concurrent monitoring reports is to provide feedback to the PMU on the status of project implementation and provide recommendations for course correction.

4.1 Sampling Methodology

In line with the ToR, concurrent monitoring was conducted in both project and comparison areas. The rationale behind incorporating comparison areas was to highlight activities or implementation similar to that of project, which may have been implemented in the comparison and then assess their results. The ratio for project to comparison has been maintained at 2:1 (as given in the ToR).

The concurrent monitoring exercise intends to cover all 347 clusters across 8 districts over the period of 6 years. 12 concurrent monitoring rounds would be conducted over 6 years i.e. two in a year. Given the phased approach to implementation, the implementation will be ongoing in 70 clusters in year I, 175 in year II and 102 in year III. Sampling strategy for concurrent monitoring is proposed likewise and as presented in the ToR. Number of clusters to be visited in each district in each round will be selected proportionately. The distribution of the beneficiary sample across districts and monitoring rounds is presented in the table below. Therefore, a total of 27 project clusters and 14 comparison clusters were covered in Concurrent monitoring Round II.

TABLE 1: CLUSTERS TO BE COVERED IN SAMPLE FOR EACH CM ROUND

Sl. No	Districts	Round wise clusters to be covered												Total
		1	2	3	4	5	6	7	8	9	10	11	12	
1	Aurangabad	3	5	5	5	5	5	5	5	5	5	5	5	58
2	Bid	3	4	3	3	3	3	3	3	3	3	3	3	37
3	Jalna	2	2	5	5	5	5	5	5	5	5	5	5	54
4	Latur	3	3	4	4	4	4	4	4	3	3	3	3	42
5	Osmanabad	3	5	5	5	5	5	5	5	5	5	5	5	58
6	Nanded	2	2	3	3	3	3	3	3	3	3	3	3	34
7	Parbhani	2	3	3	3	3	3	3	3	4	4	4	4	39
8	Hingoli	2	3	2	2	2	2	2	2	2	2	2	2	25
Total Project clusters		**20**	**27**	**30**	**30**	**30**	**30**	**30**	**30**	**30**	**30**	**30**	**30**	**347**
Total Comparison clusters		**10**	**14**	**15**	**15**	**15**	**15**	**15**	**15**	**15**	**15**	**15**	**15**	**174**
Total Project sample		300	405	450	450	450	450	450	450	450	450	450	450	5205
Total comparison sample		150	210	225	225	225	225	225	225	225	225	225	225	2610
Total beneficiary sample per round		**450**	**615**	**675**	**675**	**675**	**675**	**675**	**675**	**675**	**675**	**675**	**675**	**7815**

The steps in sampling methodology that have been adopted for concurrent monitoring phase I, have been detailed below:

Selection of Project Clusters

In line with the ToR, 27 clusters were sampled for Round 2 of concurrent monitoring. These 27 clusters were sampled proportionately from the 8 project districts, as presented above in the beneficiary sample distribution table.

The clusters required to be sampled from each district were sampled randomly from the total clusters in the district, in which the project has been implemented in Phase I and Phase II. Following this approach, the 27 clusters for Round 2 of concurrent monitoring were selected.

Selection of comparison cluster and villages

A total of 14 comparison clusters were selected for the Round 2 of concurrent monitoring. Based on overall index score, the non-PoCRA watershed clusters were selected after matching them with PoCRA clusters based on climate vulnerability index score. It was ensured that a district wise 2:1 proportion is maintained while selecting comparison clusters. The steps followed to identify the comparison arm clusters have been detailed below:

1. The number of comparison clusters to be sampled per district was decided while maintaining 2:1 ratio in project and comparison clusters per district.
2. The comparison clusters in each district which had the closest climate vulnerability index score to the sampled project clusters in the corresponding district were selected.
3. Using this approach, a comparable non-PoCRA cluster was identified for every sampled PoCRA cluster.
4. Finally, 14 clusters were randomly selected from these 27 clusters, while ensuring that the district wise proportion of comparison clusters was maintained.

Selection of Beneficiaries

In line with the ToR, a total of 15 beneficiaries were targeted to be surveyed from each sampled cluster/village. Out of these, nine beneficiaries of individual interventions (e.g. individual farm ponds, individual drip irrigation systems) were sampled. Out of these nine beneficiaries, two beneficiaries were applicants of DBT who were awaiting pre-sanction approval, three beneficiaries were chosen from list of DBT applicants who had received pre-sanction approval, one beneficiary was chosen from list of host farmers from farmer field school and three beneficiaries were chosen from list of guest farmers who had participated in farmer field school. These five DBT beneficiaries and four FFS beneficiaries were randomly chosen from the list of beneficiaries in the sampled village. In case a sampled beneficiary was not available on the day of survey, replacement for the corresponding sample was identified randomly to ensure adequate sample coverage. Community beneficiaries are classified in four categories 1) beneficiaries for natural resource management activities 2) community farm pond beneficiaries 3) members of FPCs/FPOs getting project support 4) members of SHGs getting project support. The sample frame of community NRM works implemented, community farm ponds developed, SHGs supported and FPCs supported will be taken from PMU team. Beneficiaries or potential beneficiaries living in the catchment area of the NRM works community intervention will be identified with the support of village level functionaries including Cluster Assistant, Agriculture Assistant and VCRMC members .The final coverage of sample was based status of execution of individual and community activities in the sampled villages. In case of unavailability of required number of beneficiaries of the specific category, the maximum available number of beneficiaries were surveyed.

TABLE 2: SAMPLE DISTRIBUTION FOR CONCURRENT MONITORING ROUND 2

Activity Category/Activity	Per Village Sample	Total Sample	Remarks
Individual Beneficiaries	**9**	**243**	
A. DBT Matching Grant beneficiaries			
Applied but pre sanction not received	2		Reasons will be explored in villages where no beneficiaries have received pre-sanction
Pre sanction received and following stages	3		
B. FFS beneficiaries			
Host Farmer	1		Reason will be explored in villages where there is no FFS implemented
Guest Farmer	3		
Community Beneficiaries	**6**	**175**	162
Beneficiaries of NRM activities		10	Only one sampled village has NRM works, sample of 10 will be taken from that village
Community farm pond(CFP) beneficiaries		45	CFP work has been initiated in 9 villages . 5 beneficiaries will be taken from each of these 9 villages.
FPC members		80	5 members each from 16 interviewed beneficiaries
SHG members		40	5 members each from 8 SHGs(one in each district)
Target Sample	**15**	**418**	405

Apart from the quantitative interviews, qualitative interviews were also planned to be conducted with the key project stakeholders to get their feedback on the project implementation. The qualitative interviews that were conducted along with the sample size has been presented in the below matrix:

Table 3: Stakeholders and sample for qualitative interviews

Target Respondent	Sample	Enquiry Technique	Remarks
VCRMC Representatives	1 discussion with VCRMC representatives per cluster (in project clusters), upto 27	– Discussion with VCRMC Representatives	Investigation on all project activities implemented in their village (capacity building, implementation, challenges, and suggestions for course correction)
FPC/FPO Representatives	Two FPO/PFC representative interviews per district, up to 16	– IDI with FPC/FPO Representatives	Investigation on support from PoCRA (support received, process bottlenecks, and suggestions for course correction)
Project Specialists (PS Agriculture, PS Agribusiness, PS HRD) PoCRA in districts	Discussion with Project Specialist in all eight project districts	– Discussion with Project Specialists (with PSs implementing PoCRA at district level)	Investigation on all project activities implemented in their district (implementation, challenges, and suggestions for course correction)
SDAO	IDI with SDAO's of all sub-divisions sampled for concurrent monitoring	– IDI with SDAO	Investigation on all project activities implemented in their district (implementation, challenges, and suggestions for course correction)
Agriculture Assistant	IDI with Agriculture assistants of all sampled villages (in project clusters), up to 27	– IDI with AA	Investigation on all project activities implemented at village level (implementation, challenges, and suggestions for course correction)
Cluster Assistant	IDI with Cluster assistants of all sampled villages (in project clusters), up to 27	– IDI with CA	Investigation on all project activities implemented at village level (implementation, challenges, and suggestions for course correction)
Krushi Tai	IDI with Krushi Tai's of all sampled villages (in project clusters), up to 27	– IDI with Krushi Tai	Feedback on project related activities implemented by Krushi Tai)
FFS Facilitator	IDI with FFS facilitators of all sampled villages (in project clusters), up to 27	– IDI with FFS Facilitator	Investigation on implementation of FFS at village level (implementation, challenges, and suggestions for course correction)
FFS Coordinator	IDI with FFS Coordinators, of all sub-divisions sampled for concurrent monitoring	– IDI with FFS Coordinator	Investigation on implementation of FFS in their district (implementation, challenges, and suggestions for course correction)
DSAO/PD ATMA	IDI with DSAO and PD ATMA in all eight project districts	- IDI with DSAO/PD ATMA	Investigation on all project activities implemented in their district (implementation, challenges, and suggestions for course correction)

Key Processes covered under PoCRA

The key implementation processes which were observed during the concurrent monitoring have been mentioned below.

1. Individual Farmer Matching Grant
2. Farmer Field School
3. Community Interventions
4. Farmer Producer Organisation/ Farmer Producer Companies
5. Support to SHGs
6. VCRMC Functioning

5. Sample Coverage for Process Monitoring

5.1 Quantitative

The sample was targeted based on the above-mentioned sampling approach. As mentioned above, the actual sample covered was dependent upon the implementation status of project interventions and the availability of beneficiaries in the sampled villages. A total quantitative sample of 389 was covered in project area with a sample of 239 covered for individual interventions and 150 for community interventions. In comparison area, a total of 246 sample was covered with 134 beneficiaries from individual benefits and 112 from community benefits.

Table 4: DISTRICT-WISE QUANTITATIVE SAMPLE COVERAGE

DISTRICT	PROJECT	COMPARISON
Aurangabad	73	47
Beed	57	31
Hingoli	39	42
Jalna	25	22
Latur	49	15
Nanded	32	22
Osmanabad	63	35
Parbhani	51	32
Total	**389**	**246**

Table 5: Quantitative sample coverage by project component

	Project	Comparison	Total
Individual	**239**	**134**	**373**
DBT (pre-sanction approval not received)	72	12	84
DBT (pre-sanction approval received)	68	122	190
FFS- Host Farmer	26	-	26
FFS- Guest Farmer	73	-	73
Community	**150**	**112**	**262**
NRM Community work	10	63	73
Community farm pond	45	24	69
FPC member	71	-	71
SHG member	44	5	49
Total	**389**	**246**	**635**

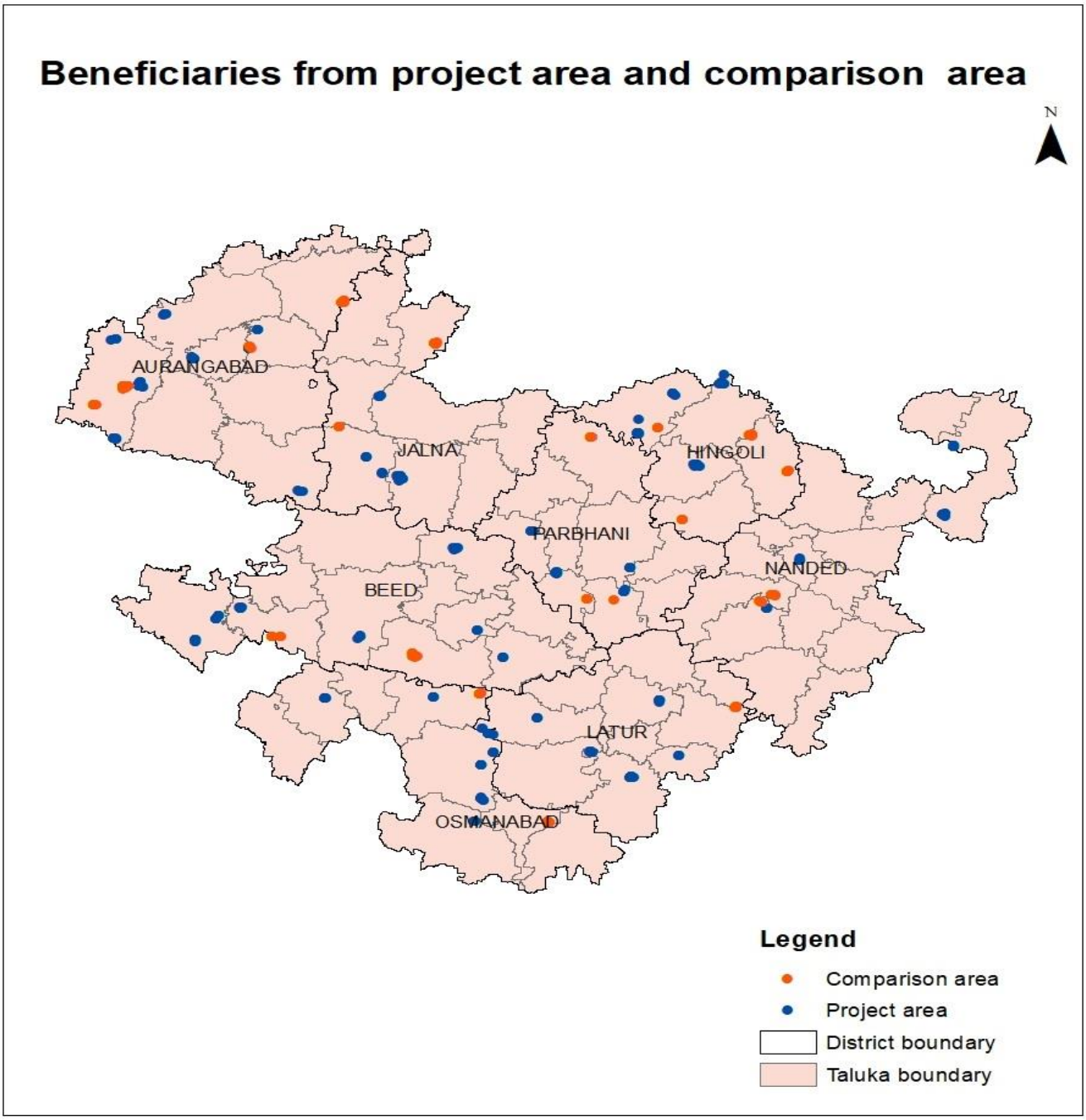


FIGURE 6: BENEFICIARIES FROM VILLAGES SAMPLED VILLAGES FOR CONCURRENT MONITORING ROUND II

In Tadhadgaon in Jalna and Anji in Nanded, no beneficiaries of DBT applications who had received their pre-sanction approval were found. In Dukkarwadi in Osmanabad only two DBT applicants with pre-sanction approval were found. In Hamrapur in Aurangabad, and Tadhadgaon and Wadi Ramasgaon in Jalna no host farmers and no guest farmers were available. Also, for interview of FPO members, 14 project supported FPOs were found instead of 16.

5.2 Qualitative

As detailed above key project stakeholders from the sampled area were reached out for qualitative interviews. The below table presents the sample which was covered. The sample shortfall in a few cases was due to unavailability of the stakeholders for the survey even after two follow-ups.

Table 6: Qualitative sample coverage

S.No	Research tool	Sample Covered
1	FGD VCRMC Members	27
2	IDI AA	25
3	IDI CA	23
4	IDI FPO	14
5	IDI DSAO/PD ATMA	5
6	IDI SDAO	10
7	FGD PS	8
8	FFS Facilitator	19
9	FFS Coordinator	12
10	Krushi Tai	24

6. Findings - Concurrent Monitoring

This chapter presents the findings from the primary survey for the second round of Concurrent Monitoring. The findings from the concurrent monitoring of different project components like Individual Farmer Matching Grant, Community interventions, FFS etc are presented below in different sub chapters.

6.1 Agriculture and Cultivation Practices

The project beneficiaries and the comparison beneficiaries of similar interventions were also asked about their land ownership, cultivation practices, and irrigation practices for the last 12 months. This section presents the findings on the above listed areas of enquiry.

6.1.1 Land ownership

91% beneficiaries in project area and 98% beneficiaries of comparison area reported to own land for cultivation. The mean land owned, cultivated and leased-in is higher in project area than comparison area, as shown in the table below:

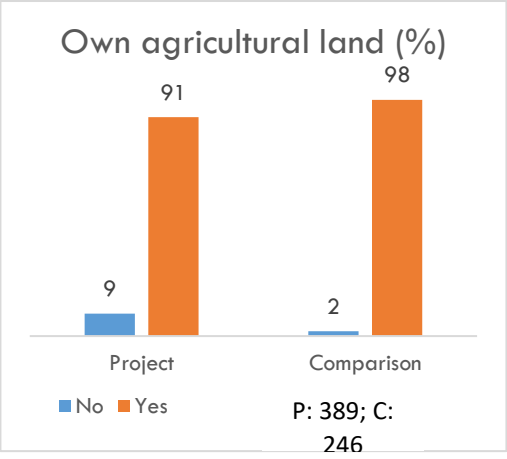


FIGURE 7: LAND OWNERSHIP PROFILE OF BENEFICIARIES

TABLE 7: LAND OWNERSHIP PROFILE OF BENEFICIARIES

MEAN LAND OWNED	LAND (ACRE)	STD. ERROR	95% CI	
PROJECT (N=353)	4.48	0.22	4.04	4.92
COMPARISON (N=242)	4.23	0.18	3.87	4.59
MEAN LAND CULTIVATED				
PROJECT (N=352)	4.28	0.21	3.87	4.70
COMPARISON (N=242)	4.01	0.14	3.72	4.29
MEAN LAND LEASED-IN				
PROJECT (N=7)	4.21	1.53	0.98	7.44
COMPARISON (N=11)	4.09	0.69	2.63	5.55

6.1.2 Irrigation Practices

An enquiry was made to know if the beneficiaries had a source of irrigation for their farmland. It was found that 87% of farmers from project area and 89% farmers from comparison area reported to having a source of irrigation.

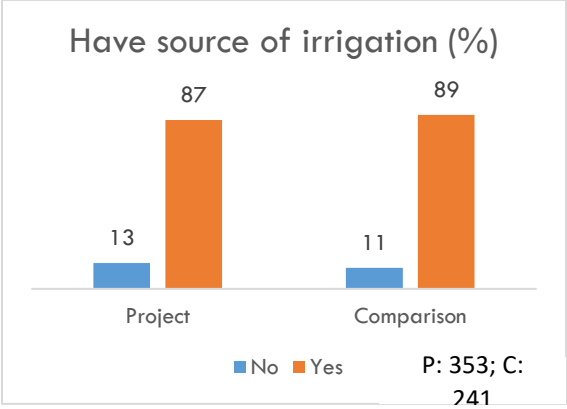


FIGURE 8: DISTRIBUTION OF SOURCE OF IRRIGATION

Farmers who had reported that they had a source of irrigation on their land were asked for these sources. The most reported source was dug-well with 56% beneficiaries from project and 52% beneficiaries from comparison area reporting it as their source of irrigation. We see a sharp difference between project and comparison area for borewell use. 30% in project area reported borewell as a source of irrigation in contrast to 18% in comparison area. In contrast, 15% beneficiaries from comparison area reported using farm pond as their source of irrigation compared to only 6% from project area who reported use of farm pond. Use of check dam is also higher in comparison area than project area. Equal proportion of beneficiaries reported canal or river as a source of irrigation. The findings on sources of irrigation used is significant[5], with p-value<0.05.

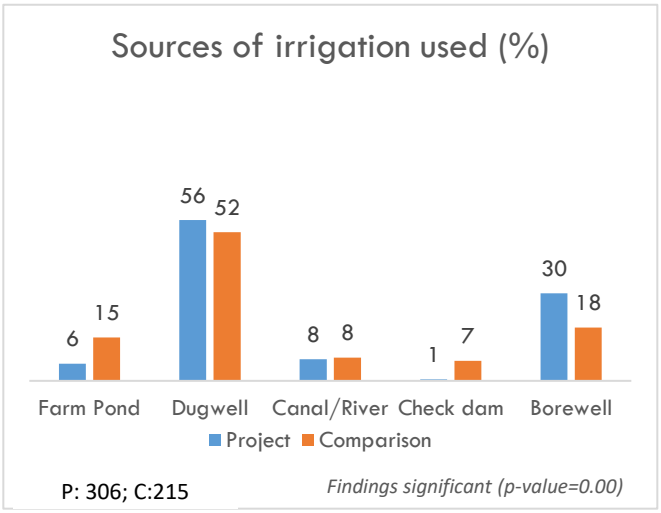


FIGURE 9: IRRIGATION SOURCES USED ACROSS STUDY ARMS

6.1.3 Cultivation Practices

[5] * denotes significance at 95% confidence interval as per t-test of significance.. A statistically significant t-test result is one in which a difference between two groups is unlikely to have occurred because the sample happened to be atypical. Statistical significance is determined by the size of the difference between the group averages, the sample size, and the standard deviations of the groups

To understand their cultivation practices, the beneficiary respondents were asked about their crops sown in each season. In kharif season, soybean is the most grown crop with 55% of all respondents reporting sowing it. Cotton is the second most common crop of kharif with 46% respondents reporting growing it. 18% reported growing pigeon pea, 11% grew maize and 7% grew millet. Green gram and black gram were grown only by 4% and 6% of the respondents respectively.

In rabi, fewer respondents reported to growing crops. The main crop grown in rabi is chickpea, reported by 31% of the respondents. Approximately 18% reported sowing sorghum and 19% reported sowing wheat during rabi.

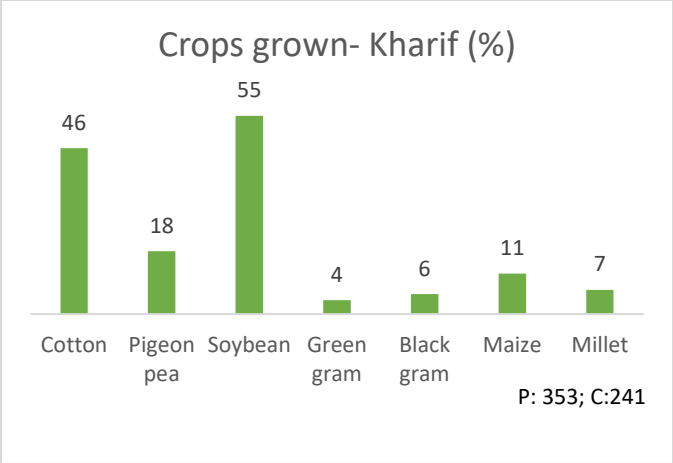


FIGURE 11: MAIN CROPS GROWN IN KHARIF

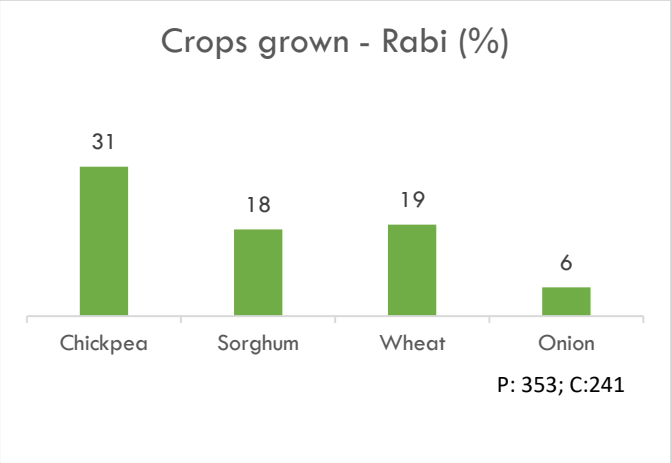


FIGURE 10: MAIN CROPS GROWN IN RABI

Promoting certified varieties of climate resilient seeds is an important objective of PoCRA. Toward this end, we enquired how much of the area cultivated by the farmers was sown using certified seeds. This was asked for each crop separately. It was found that the highest area under cultivation using climate resilient certified seed varieties was for chickpea (Project: 62%; Comparison: 73%) followed by soybean (Project: 40%; Comparison: 48%) and pigeon pea (Project: 18%; Comparison: 41%).. The overall percent of land under certified seeds for these three crops is 44% in project are and 55% in comparison area.

TABLE 8: LAND UNDER CLIMATE SEED VARIETIES FOR SPECIFIED CROPS IN STUDY AREA

	Land under production (acres)		Land under climate resilient seed varieties (acres)		% of land under climate resilient seed varieties	
Crop	Project	Comparison	Project	Comparison	Project	Comparison
Soybean	579	488	233	237	40%	48%
Pigeon pea	112	42	21	17	18%	41%
Chickpea	312	201	192	147	62%	73%
Overall	1003	731	446	400	44%	55%

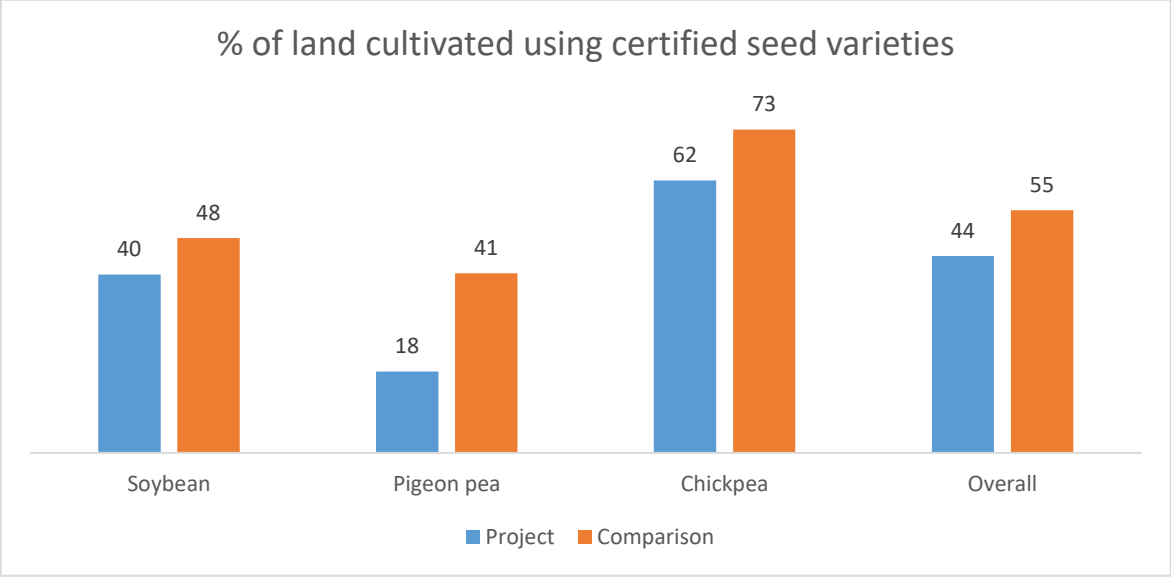


FIGURE 12: PERCENTAGE OF LAND UNDER CLIMATE RESILIENT CERTIFIED SEED VARIETIES

A very minimal number of farmers interviewed said they had lands under orchards (Project: 9%, Comparison: 5%). The average land under orchards was 2.1 acres in project area and 1.7 acres in comparison areas.

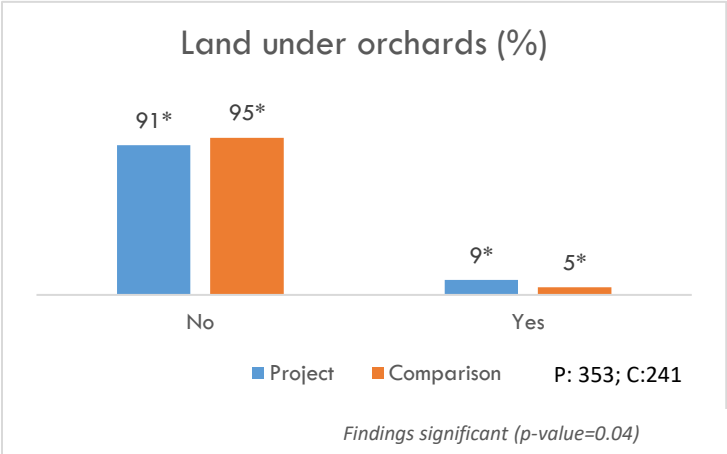


FIGURE 13: FARMERS WITH LAND UNDER ORCHARDS

6.2 Beneficiary Awareness about PoCRA or other programs

As one of the key objectives of concurrent monitoring, the study aims to gauge the level of awareness of the beneficiaries of the different benefits under PoCRA and other schemes, sources of information and if they received and adopted any of the agricultural technologies being promoted.

Source of Information

The respondents were asked of the people or groups through whom they came to know about PoCRA in project areas and about other projects with similar benefits in comparison area. It was found that in project area the project staff, which includes Agriculture Assistant, Cluster Assistant, FFS facilitator, Project specialist, Krushi Tai etc., are the main source of information at 55%. This is followed by information relayed during Gram Sabha meetings (48%). Only 16% of the beneficiaries from project area reported the VCRMC as their source of information on the project.

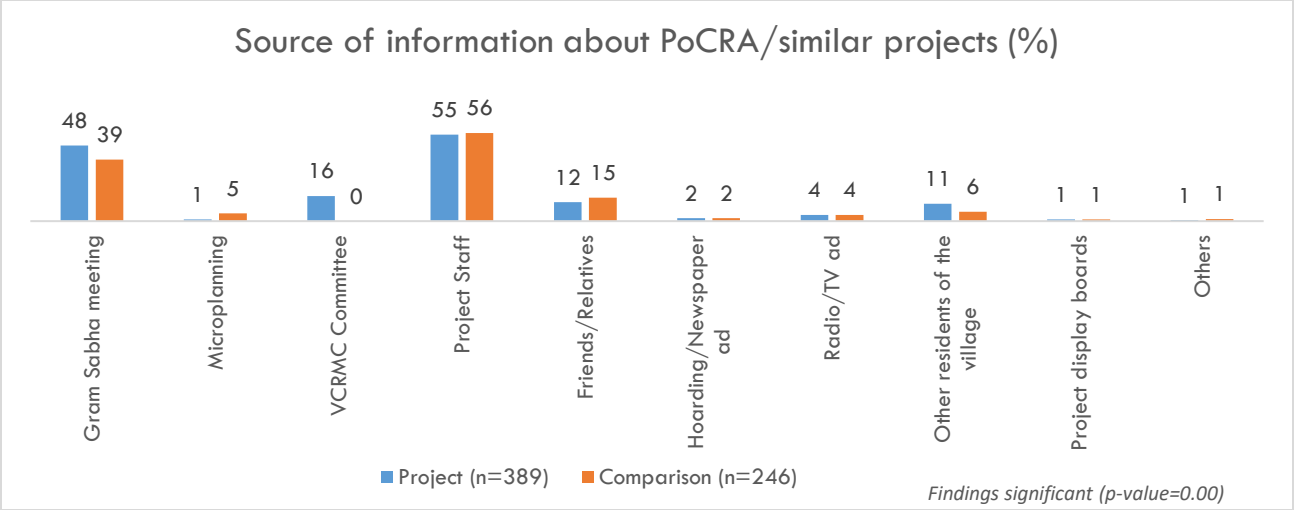


Figure 14: Sources of Information of various Projects

Awareness of application steps through DBT Application

Under the PoCRA project, online applications through the Direct Beneficiary Transfer (DBT) app are being promoted to ensure transparency in the application process. The project beneficiaries were enquired about their awareness on the steps in availing benefits from the DBT portal, starting right from registration on the portal to transfer of the matching grant into the beneficiaries account. The highest awareness was for *Registration on DBT portal* at 82% followed by *application for matching grant* at 59%. Other steps in DBT application which project beneficiaries were aware of include *Verification by CA* by 33%, spot verification by AA by 33% , followed by approval by VCRMC, pre-sanction approval by SDAO, submission of bills and expenditure and transfer of matching grant to their bank account. This has been detailed below in the below graph.

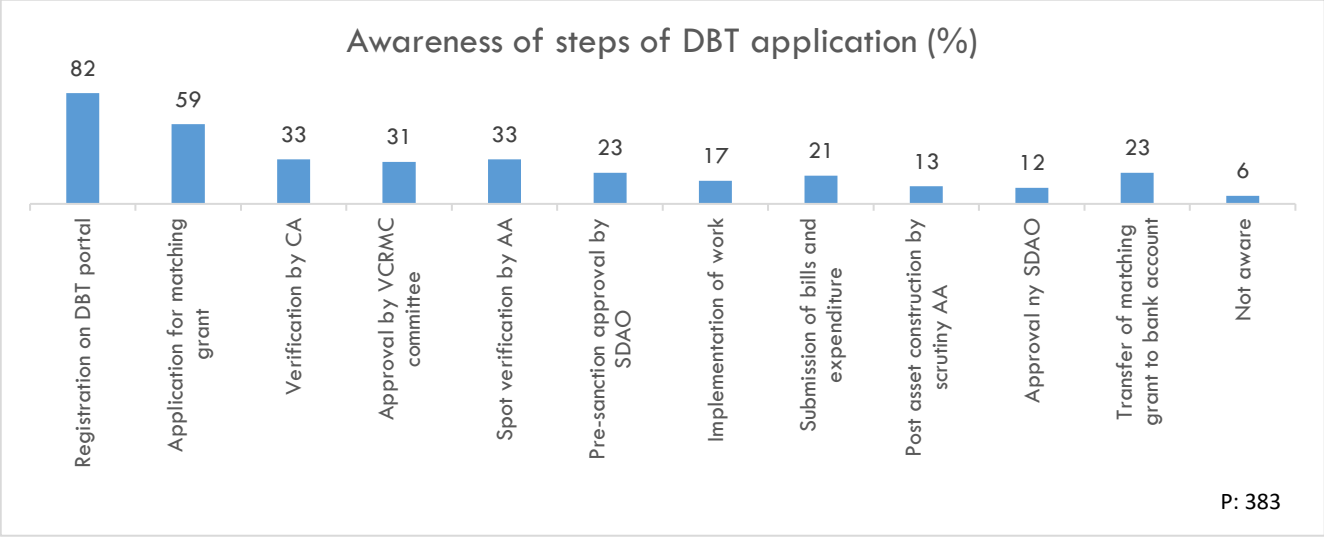


FIGURE 15: PERCENTAGE OF BENEFICIARIES AWARE OF STEPS OF DBT APPLICATION

6.2.3 Awareness of different benefits that can be availed under PoCRA

The project arm beneficiaries were also enquired about their knowledge of the different benefits that can be availed as part of PoCRA. It is evident from the below graph that the maximum awareness amongst project beneficiaries was for *matching grant for purchase of water pumps/pipes/drip irrigation systems or sprinklers (85%) and* for farm pond inlet & outlet (59%). Very few beneficiaries were aware about community benefits under PoCRA like *Catchment area treatment using Continuous Contour Trenches (CCT) and Construction of Subsurface drainage wherever the land slope permits good drainage*. Beneficiary awareness for *matching grant for developing Seed Processing and Seed Testing Infrastructure* and *Production of foundation and certified seed of climate resilient varieties* was also observed to be low.

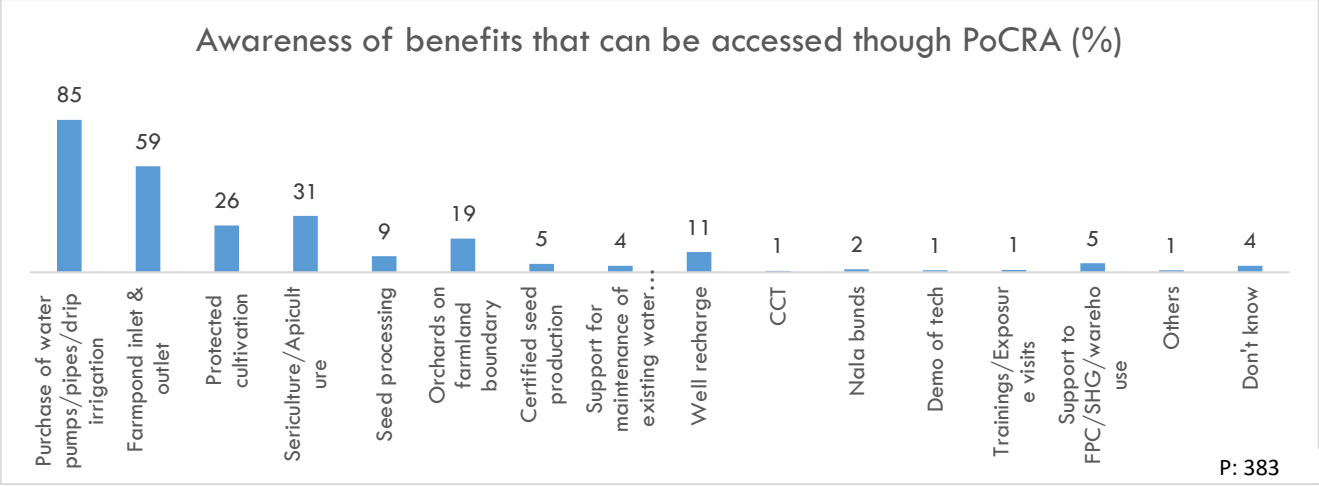


FIGURE 16: PERCENTAGE OF RESPONDENTS AWARENESS OF DIFFERENT BENEFITS UNDER POCRA

6.3 Individual Farmer Matching Grant

This sub- section presents the findings from the concurrent monitoring of the Individual Farmer Matching Grant component based on the quantitative interviews with project beneficiaries and beneficiaries of similar benefits in comparison area and from the qualitative interviews with key project stakeholders and from expert visits.

6.3.1 Applications for individual benefits

Respondents who had applied for benefits (in both project and comparison arms) were enquired about the type of benefits they had applied for. The benefits that are most popular are related to irrigation and increasing water availability, such as drip (15%), sprinkler (21%), pipes (22%), water pumps (16%). Other benefits applied for were small ruminants (8 %) and agroforestry (6%). Similarly, in comparison area, the demand for irrigation-related benefits like sprinkler (32%), drip (19%), individual farm pond (17%) and construction of open dug well (11%) are the highest, marking the drought-prone characteristic of the Marathwada region.

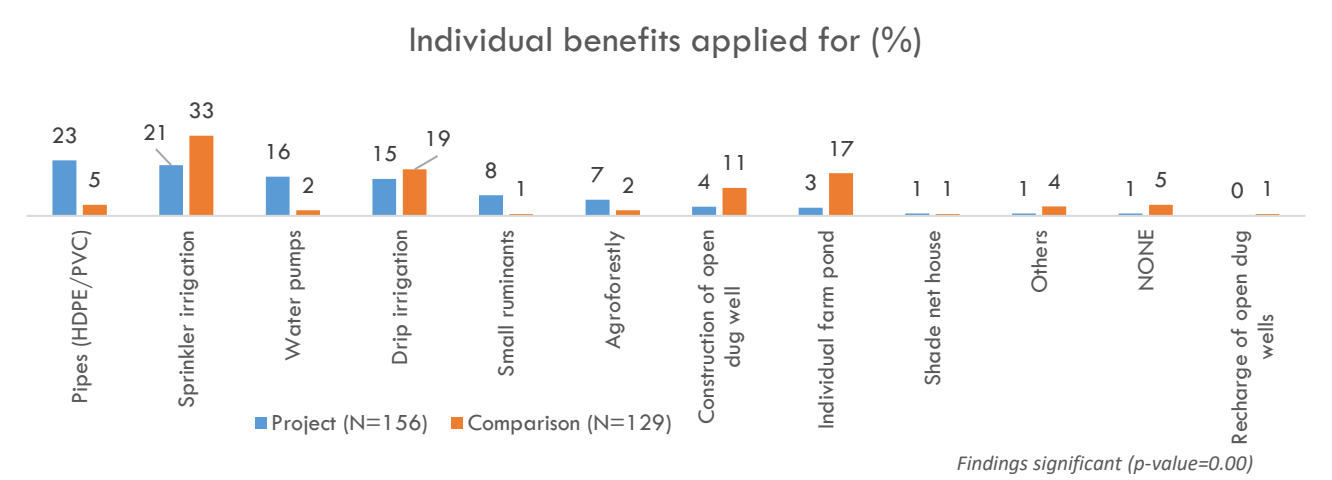


FIGURE 17: INDIVIDUAL BENEFITS APPLIED FOR (%)

The project arm beneficiaries who had reported that they have applied for project benefits were also enquired about the status of their application. A third of the applicants (33%) reported that their application is in the first step of having applied for a grant, 22% were awaiting pre-sanction approval by SDAO, 8% have demanded matching grant through submission of bills and 11% of the beneficiaries have completed the process and received matching grant in their bank accounts. However, only 3% of the beneficiaries reported that they were not aware of the status of their own application.

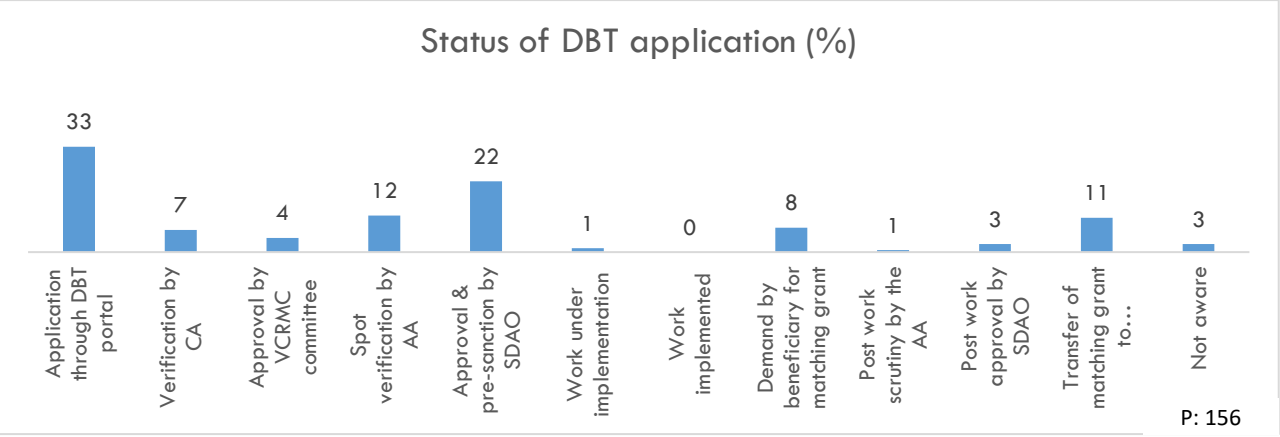


FIGURE 18: STATUS OF DBT APPLICATION AS REPORTED BY BENEFICIARIES

6.3.2 Feedback of Application Process

The surveyed beneficiaries across project and comparison were enquired about their key reasons for applying and who had motivated them to apply for the different grant benefits. Increase in agricultural production and income was the most reported response with 49% from project and 50% from comparison reporting the same. Approximately 40% respondents across project and comparison area reported that they had applied for project benefit as it would help to increase their water supply for agriculture. It can also be observed that only 7% from project and 9% from comparison reported that they applied for the project benefits as they were climate friendly, therefore it is important to spread climate resilience related benefits of the project.

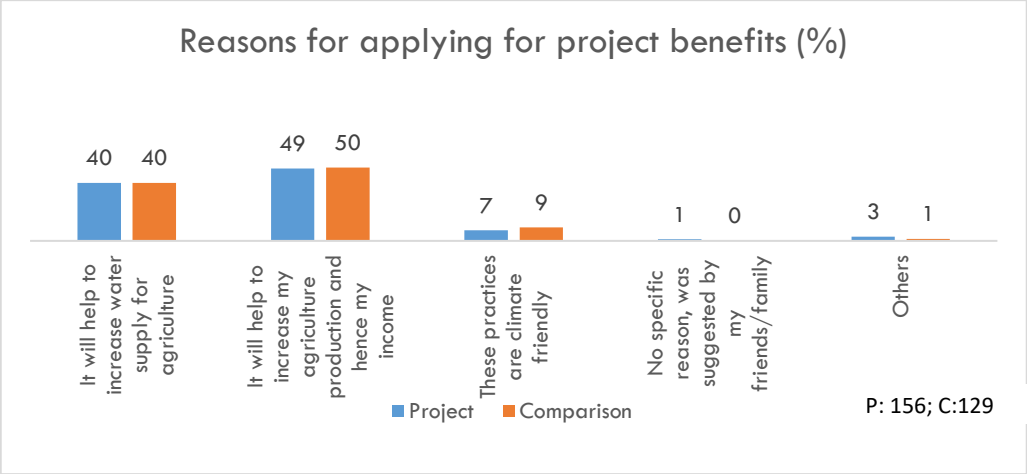


FIGURE 19: REASONS FOR APPLYING FOR PROJECT BENEFITS

It can be observed that the biggest motivators for applying for the different grants and benefits are the project staff in project areas (53%), followed by self-motivation (31%) and VCRMC members (26%). In comparison area, self-motivation was the biggest motivator with 47% respondents, followed project staff (29%). It can be observed that friends and neighbours, and family members have less influence on the motivation to apply. It can be said that it's mostly the project staff and the village level institution members including gram panchayat members who are motivating or pushing the beneficiaries to avail the benefits of PoCRA.

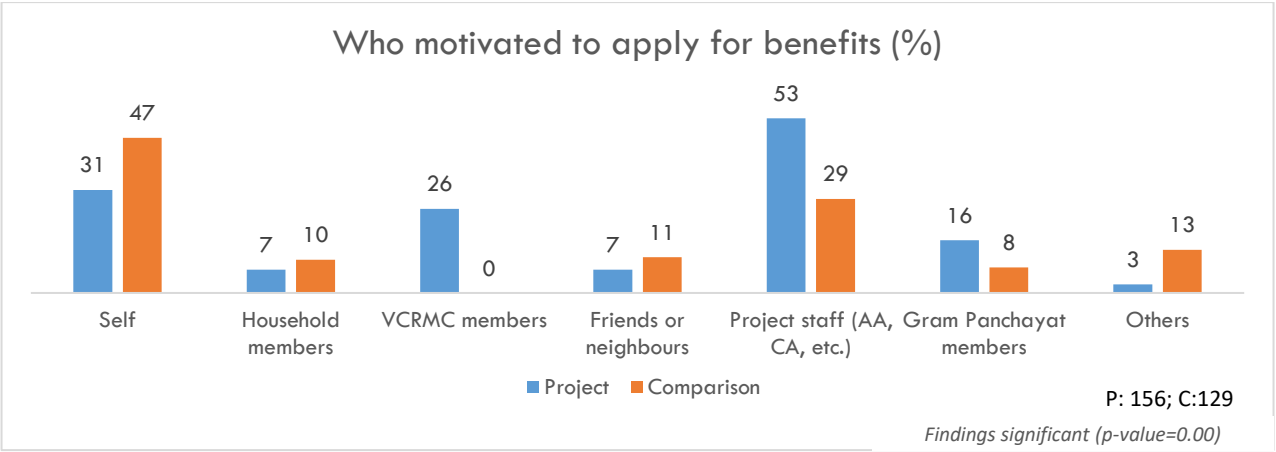


FIGURE 20: PEOPLE WHO MOTIVATED THE BENEFICIARIES TO APPLY FOR PROJECT BENEFITS

Beneficiaries were also asked of who had helped or assisted them with the application process. In project area, the most assistance was provided by e-Sewa Kendra (25%), followed by Gram Panchayat members (21%), self or family members (19%), cluster assistant (18%) and VCRMC members (15%). In comparison area, self or family members had majorly provided assistance in the application process at 36%, followed by e-Sewa Kendra (23%) and cluster assistant (16%).

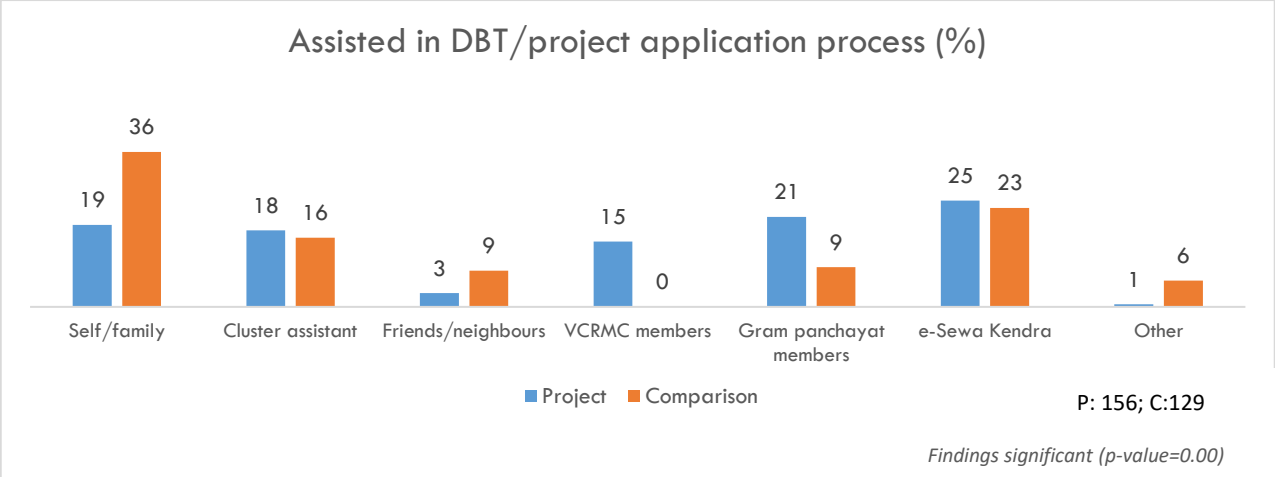


FIGURE 21: PEOPLE WHO ASSISTED IN APPLICATION PROCESS FOR PROJECT BENEFITS

Furthermore, the beneficiaries were asked about the additional costs they incurred and challenges they faced during application. 54% from project area and 58% from comparison area said that they had to incur extra costs for accessing the benefits. When asked for type of costs, the response was similar across project and comparison area. Documentation costs and transportation costs were highest reported. Loss of wage or time spent on the process was recorded by 53% beneficiaries on project area and 60% in comparison area.

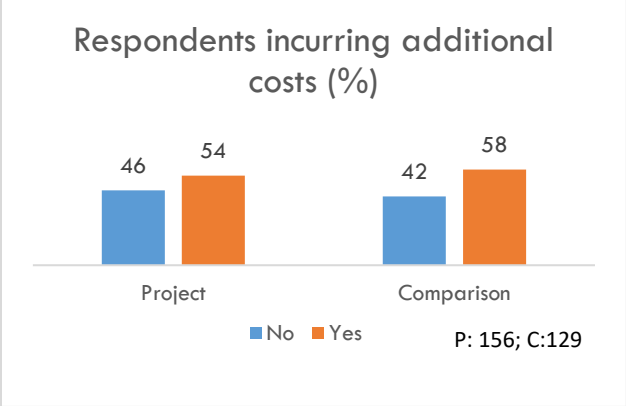


FIGURE 23: ADDITIONAL COSTS INCURRED DURING APPLICATION

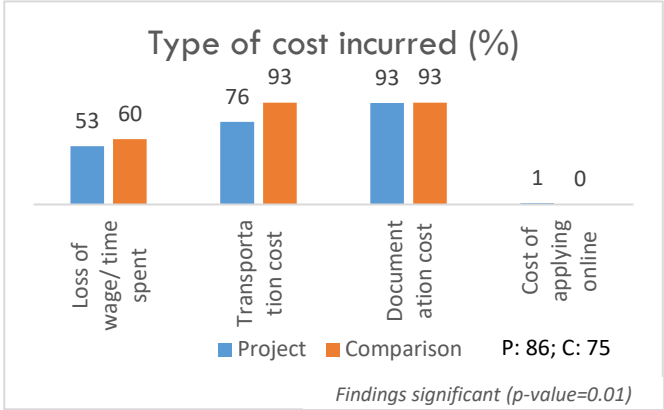


FIGURE 22: TYPE OF COSTS INCURRED DURING APPLICATION PROCESS

As part of the concurrent monitoring, individual matching grant beneficiaries were also asked how the DBT application process can be further improved. The most reported feedback received (by 30% respondents) was that matching grant should be increased. Further, 15% of interviewed beneficiaries said they wanted support in filling the application whereas 9% reported that documentation process in application to be simplified. 14% also reported that the process of applying and getting benefit also needed to be

simplified. Though it is heartening to find that 29% of the beneficiaries were satisfied with the current process.

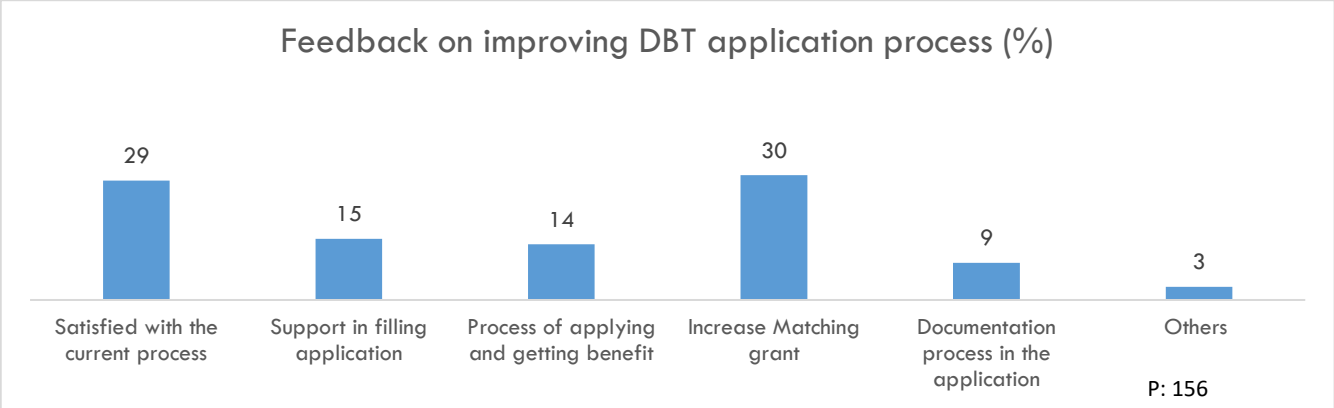


FIGURE 24: SUGGESTIONS ON WHERE IMPROVEMENT IN APPLICATION PROCESS IS REQUIRED

6.3.3 Challenges faced during application

The beneficiaries in both project and comparison arm were enquired if they had faced any challenge in accessing project benefits. Only 20% of beneficiaries from project areas and 29% beneficiaries from comparison areas stated that they faced issues while trying to access benefits under different schemes.

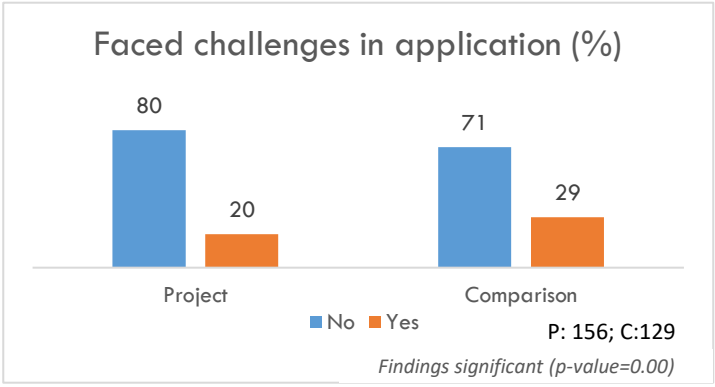


FIGURE 25: BENEFICIARIES WHO FACED CHALLENGES DURING APPLICATION PROCESS

The beneficiaries who had acknowledged facing challenge in accessing project benefits, were further enquired about the type of challenge they had faced in accessing project benefits. In the project areas, delay in sanction from the project staff (50%) and lack of clear-cut guidelines (44%) were the main challenges. In the comparison areas, delay in sanction from the project staff (53%) and lack of funds to construct asset (34%) were reported as the main problems. A few people had also pointed out lack of support in the registration and application process (19 % in project and 21 % in comparison) as one of the challenges in accessing project benefits.

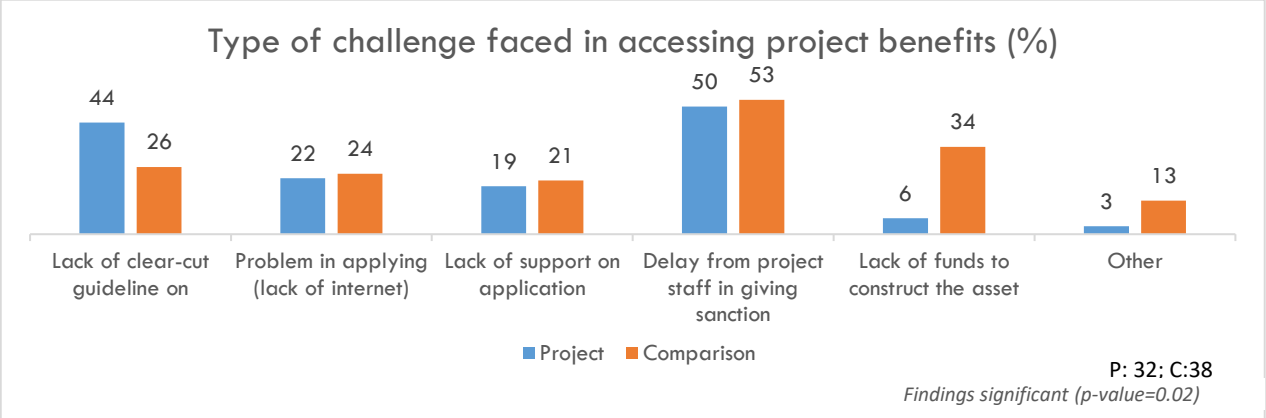


FIGURE 26: CHALLENGES FACED IN APPLICATION PROCESS

The beneficiaries were also asked if they thought the timeline for completing the asset construction activity was sufficient. This was asked across both project and comparison arm for benefits received from either PoCRA or other agricultural/ watershed/ husbandry projects.

In the project arm, 89 % of the beneficiary beneficiaries acknowledged that the time available for completing the activity or creation of the asset is sufficient. In comparison arm, similar trend was observed as 85 % of the beneficiaries acknowledged that the time period for completing the asset was sufficient.

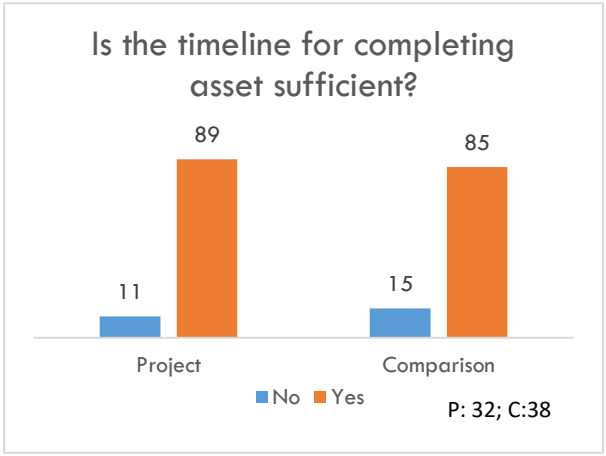


FIGURE 27: SUFFICIENCY OF TIME FOR ASSET CONSTRUCTION ACTIVITY

The assets in the project arm which were reported to be under implementation or implemented stage were also physically verified. It was observed that all 97% individual assets which were under implementation or implemented stage were found constructed at site while 3% were under construction during physical verification. The activity for which the asset was under purchase was goat farming.

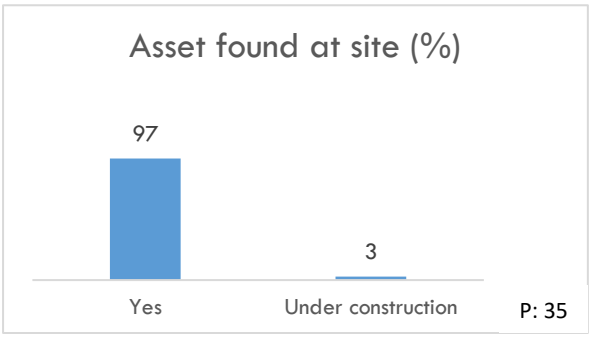


FIGURE 28: STATUS OF ASSET CONSTRUCTION

Further, feedback specific to each type of activity for which matching grant was provided was also taken. This feedback was taken from the beneficiaries who had implemented the activity or purchased the asset.

1. Drip Irrigation

Of the beneficiaries interviewed, four had purchased and implemented drip irrigation. All four reported using the drip set only on requirement. Their drip system irrigated area ranging from 2 acres to 4 acres. The crops reported to be cultivated using this irrigation system are cotton, soybean, pigeon pea, maize, wheat and turmeric. All four beneficiaries reported that they had followed project guidelines to purchase

the asset and did not face any issues in following any specific guideline. The project beneficiaries acknowledged that by implementing drip irrigation they have accrued benefits like increase in income, increase in their production, efficient use of water, increased availability of water for protected irrigation. One beneficiary had also reported that he was able to change his cropping pattern by installing drip irrigation. However, one beneficiary reported that he was yet to see the benefits. We see that drip irrigation is used as a supporting irrigation method. Overall, the feedback for drip irrigation is positive and shows improved agricultural practices by the beneficiaries.

2. Sprinkler Irrigation

Sprinkler irrigation was purchased and implemented by eight of the interviewed beneficiaries. When enquired of the frequency of use of the asset, seven responded that they used it as and when required while one reported to use it seasonally. The area reported to be irrigated by sprinkler ranges from one acre to 10 acres. Cotton, pigeon pea, chickpea, soybean, maize and wheat were the main crops reported to be irrigated using sprinkler. Other crops recorded were bottle gourd, carrot, capsicum and okra. It was heartening to find that none of the beneficiaries had faced any issue in following the project guidelines for procuring sprinkler irrigation. Further, half said they followed project guidelines to purchase the asset while half reported that they purchased the asset as per their own suitability. This points that difficulty in following project guidelines was not the reason for not following the guidelines during purchase of asset. The benefits that the respondents experienced by using sprinkler irrigation are increase in income and production, increased availability of water and its efficient use, and change in cropping pattern.

3. Pipes

Under PoCRA, individual beneficiaries can apply for PVC/HDPE pipes to aid irrigation on their fields. Eleven sample respondents had purchased pipes through PoCRA support. Nine respondents reported of using pipes when required, one used it seasonally and one reported of using pipe set regularly for irrigation. The area irrigated using pipes ranges from one acre to four acres. Six beneficiaries claimed to have followed all the project guidelines while purchasing the asset while five beneficiaries said they purchased the pipes as per their suitability. Providing *proof of permanent water supply* was reported by one respondent as a difficult guideline to follow while another reported that he was not aware of any guidelines. The remaining did not face any issues in following the project guidelines for asset purchase. Increase in production followed by increase in income are the most reported benefits by the beneficiaries procuring pipes. Increased availability of water for irrigation and also in dry spells, efficient use of water and change in cropping pattern were the other benefits recorded.

4. Water Pumps

Provision of matching grant to purchase water pump set to draw water from irrigation sources is another popular benefit that can be accessed under PoCRA. Of the 13 beneficiaries who had procured water pumps with PoCRA support, nine reported using it only when required while four reported of used them regularly. The area irrigated using water sourced from pumps ranged from one acre to four acres. Seven beneficiaries said they had followed project guidelines whereas six had acquired the pumps according to their own suitability. The issues reported with respect to guidelines were providing proof that they had not already taken a pump for the same plot of land, providing proof of permanent water supply, providing agreement for shared water supply, and providing proof of electricity supply. The key benefits from installing water pump set reported by PoCRA beneficiaries were increase in income, increased

production, availability of more water for irrigation, availability of water in dry spells and efficient use of water for irrigation.

5. Individual Farm Pond

Only two beneficiaries from our sample had constructed their individual farm pond. Neither of the constructed farm pond had an inlet-outlet. One beneficiary said that he has not starting using his farm pond yet. The other beneficiary had lining in his farm pond and said that water lasted in his pond for 50 days after being filled completely. He reported that his cost of irrigation has reduced after he started to use the farm pond. The pond was used for irrigation as per the requirement. Both beneficiaries reported that they did not face any issue in following guidelines for construction of their ponds. The beneficiary with a functional pond said he had seen a rise in his income from using the farm pond for irrigation.

6. Horticulture Plantation

Eligible individual beneficiaries can also avail matching grant for horticulture plantation under PoCRA. Horticulture crops which are grown by beneficiaries through PoCRA support include pomegranate, citrus, mango, custard apple to name a few. Two beneficiaries had applied for and implemented it. Neither of the beneficiaries have received training related to this activity. One farmer had an orchard of orange which he grew over one acre. He sourced the seeding from government nursery and had followed project guidelines for the same. The other grew sweet lime that had been sourced from agriculture university and he had planted it over two acres. Neither had installed drip irrigation for their horticulture. Production from their orchards had not yet started, and so they had not yet benefitted from this asset.

7. Rearing Small Ruminants (Goats)

Beneficiaries who had purchased goats with support from PoCRA were also reached to receive feedback on the application process and benefits accrued. One beneficiary from our sample had purchased this asset and acquired goats. He said he would practice it for at least the next ten years. The beneficiary reported that he followed project guidelines to purchase the asset. He said he found the market for sale of goats suitable and PoCRA support has benefitted him by improving his self-employment opportunity.

Overall, we have received positive feedback from the specific individual beneficiaries. Majority have not faced any issue in following project guidelines and have reported that project support has helped to improve their livelihood, income and agricultural practices.

6.3.4 Stakeholder Feedback

As mentioned above in the methodology section, feedback of the key project stakeholders including VCRMC members, Agriculture Assistant, Cluster Assistant, SDAO, DSAO/PD ATMA and Project Specialists was sought on PoCRA and on each project component including individual farmer matching grant.

The activities which the community perceive to be more beneficial was analysed. As observed in the previous concurrent monitoring round, more people were attracted towards benefits related to irrigation and water-related sources due to scarcity of water in the region. Pipes, water pumps, drip irrigation and sprinkler irrigation had the most applications as reported by all the stakeholders. The benefits cited by farmers with these schemes are increased water availability, increased crop production and better income. Landless beneficiaries applied for rearing small ruminants as it did not require land and provided an additional source of income. On the other hand, the least received applications were for the activities of

shade net, poly house, fishery as well as apiculture and sericulture. High investment requirement for assets like shadenet and poly house and no clear-cut guidelines for sericulture and fishery were the key reasons for receiving less applications for these activities.

Reasons for high applications of Community farm ponds in Jalna

It was observed that Jalna had more applications of community farm ponds. On enquiring the same with the key project stakeholders, it was stated that people were interested to have farm ponds as they were inspired from successful implementation of Kadawanchi, Nawapur and Nawagaon model where the practice of horticultural crops such as grapes and pomegranate has been done on large scale. Many farmers from Jalna had gone for exposure visits to these villages to see the horticulture plantations.

They had observed that horticulture plantations in this villages are irrigated with the large size lined farm ponds. Therefore, farmers in Jalna are trying to replicate this model, leading to high number of applications from Jalan district.

Through the qualitative interviews, reasons for not applying for benefits even after registering on the DBT portal were enquired. Not having complete knowledge of the application process and eligibility criteria at the time of registration was the key reason reported. E.g. some applications do not have the required documents. Also, after the registration when the applicants understood that they would need to invest upfront, many of them could not apply.

Main reasons for rejection of individual grants were also enquired through the qualitative interviews with key project stakeholders. Applicants not meeting the eligibility criteria was reported to be the key reason. Most common reasons for not meeting the eligibility criteria were a) Applicants had no water source but had applied for benefits like drip, sprinkler, water pumps and pipeline b) Applicants with land or who did not meet the eligibility criteria had applied for goatery or poultry. A few pipe applications were reported to be rejected in case where someone else's land is between two pieces of land of the applicant. Additionally, submission of incomplete documents, lack of availability of landless certificate, lack of Aadhar linked bank account, uploading of improper/incomplete documents, uploading of invalid 7/12 document without signature of Talathi etc were reported to be the major reasons reported for rejection of individual grants.

Further, key reasons for delay in processing of individual grants were also enquired. The AAs, CAs and also other key stakeholders (to a certain extent) reported that the AAs and CAs have high workload as they have (7-15) villages under them to cover. This also leads to delay in spot verification by the AA. Another reason of delay pointed was getting the activity approved from the SDAO desk. DBT applications were also affected due to code of conduct being implemented due to Lok Sabha elections and Vidhan Sabha elections during the months of May and October 2019. Delays from farmers in uploading bills, network or bio metric issues as well as unavailability of farmers during spot verification are some other common reasons for delay in processing of DBT applications. Sometimes, the standing crop also caused delay from farmers side in the individual works such as pipes and drips.

Reasons for not starting the activity implementation despite receival of pre-sanctions

It had been observed that a lot of beneficiaries who had received pre sanction had not initiated the works. Therefore, the reason for the same was enquired for all the key project stakeholders. Lack of immediate availability of funds to purchase the asset along with other expenditure priorities were reported to be the key reason. The proportion of farmers who do not need the asset any more are very less. Further, the farmers who had previously applied for other benefits but have not received the matching grant want to implement the next activity only after receiving the matching grant for the previous application. It was also reported that in cases when the farmers have standing crops, they would delay the procurement and installation of activities like pipes, drips and sprinklers. Also, during an expert visit it was also reported that for plantation activity, the crops are planted only after getting rain in monsoon. Therefore, sometimes they have the limitation to initiate this activity even after receiving pre sanction.

Feedback on the DBT Online Application

PoCRA intends to leverage technology in its implementation for which DBT application is used to process the individual grant applications. Therefore, feedback on DBT application was taken to access its ease of use and how it can be further improved. Overall majority of the stakeholders gave positive feedback about the DBT application. It was acknowledged that online application process through DBT application increases transparency and avoids pilferage. Additionally, some limitations in the DBT app were also shared. Since the DBT application is online, most of the problems are caused due to non-availability of good internet access in most of the villages. It takes as much as 20 minutes to upload a document, as quoted by on the of Agriculture Assistants. Some farmers also go to Taluka to fill their application, thus adding to the cost to be borne by the farmer. Also, majority of the farmers need to take some one's help to apply are they are not able to apply using the DBT application by themselves. One SDAO suggested that if farmers do not start work in time after pre-sanction, his/her name should be automatically deleted from the app portal.

Other Activities /benefits suggested to be added in Individual benefit list

While receiving feedback on the individual matching grant component of the PoCRA project, project stakeholders and beneficiaries had provided feedback on what additional benefits or activities can be included under this project component. These specific activities or benefits that were suggested to be included are listed below

- Boundary protection for farm ponds to protect the farm pond and its lining
- Matching grant for solar energy pumps as they would help to save electricity and reduce greenhouse emissions. Also, they would be convenient to farmers as currently farmers have to go to their fields at night-time (when electricity is available) to irrigate their fields
- Matching grant for fencing or boundary protection of their farms as there is risk of crop damage due to animal attack
- Matching grant to develop individual level storage facility E.g, individual storage was requested for onion. Farmers in VCRMC committee reported that it is difficult to manage in community storage infrastructure and it could lead to quarrels amongst people.
- Due to electricity availability with low voltage, the motor set purchased as per guidelines (ISI marked) does not work. It was suggested that more flexibility should be provided for asset

purchase. (*This feedback was received specifically in Janefal Village, Phulambari Taluka, Aurangabad*)

- It was suggested that subsidy on pipes should be reassessed as is less as compared to their current market price.

During the qualitative interviews, as previously done in CM round 1, the surveyed stakeholders were also asked about the key challenges faced in the implementation of the individual farmer matching grant component. Further they were also asked about the proposed solutions for these challenges. The reported key challenges and our suggested solutions for the same (based on stakeholder feedback and our analysis) have been presented below:

1. *Difficulty in arranging funds by the potential beneficiaries for upfront payment to purchase/ construct the assets. This is again reported to be the biggest challenge by all stakeholders*
   Facilitating bank loans for the applicants receiving pre sanction would help farmers arrange funds for purchasing or constructing the asset. It was suggested that partial advance can be provided to the applicants who have received pre sanction. It was suggested that special mechanisms should be developed for landless and poorest of the poor beneficiaries as they specifically face problems in investing upfront.
2. *High workload on field staff specifically AAs, CAs which leads to delay in accessing project benefits*
   The key project stakeholders suggested that currently available manpower for implementing the project should be reassessed and increased if required. The number of villages under each AA and CA should be fixed as currently some of them have more than 10 villages which becomes difficult for them to manage. It was suggested that Taluka Officers should be involved in project implementation who can act as a layer between SDAO and AAs to manage the workload.
3. *Difficulty faced by farmers or potential beneficiaries to apply through DBT portal on their own.*
   It was observed that many beneficiaries are taking services from e-seva kendra and private service providers to apply for individual benefits though DBT application. Krushi Mitra and Krishi tai should be trained in each village so that they can help the potential beneficiaries to apply through DBT portal.
4. *Difficulty in application through DBT portal due to network issues*
   It was suggested that DBT portal should have option to apply in offline mode too, especially in areas which have poor network and internet connectivity.
5. *It was reported that farmers face issues in getting bills with GST hence in uploading their bills on DBT application.*
   Project staff should provide guidance to the applicants so that they procure assets with GST bills only
6. *Challenges in goat farming and activities for landless and widows. It was reported that beneficiaries for this activity are facing challenges in getting landless certificate.*
   The key stakeholders including VCRMC members and CAs had reported that the goat varieties required to be purchased as per the guidelines (e.g. Osmanabadi) are expensive to purchase leading to low uptake by potential beneficiaries. It is suggested that this guideline should be technically reassessed. SDAOs and DSAOs had also pointed about the lack of expertise of Agricultural department in handling the Goat raring activity and suggested that livestock department should be involved in the same. It is to be noted that as much as 5 SDAOs suggested removal of this activity from PoCRA as many cases of duplication and fraud are being reported. We suggest that stringent mechanisms need to be developed by the project to avid cases of duplication and fraud in this activity

"Goat farming must be given to livestock department as Agriculture people do not have technical skills for this" – SDAO

7. *Challenges reported for horticulture and agroforestry activities*
   The key project stakeholders mainly SDAOs pointed that agroforestry activity requires extensive monitoring as the matching grant amount has to be given in period of four years. To reduce the burden on the staff it was suggested that one-time payment or lesser number of payments milestones should be considered for this activity. Inclusion of horticultural crops which are traditionally cultivated in the project area was also suggested. E.g. fig cultivation in Khultabad block of Aurangabad district.

6.4 Farmer Field School (FFS)

This sub- section presents the findings from the concurrent monitoring of the Farmer Field School component. The findings are presented based on the quantitative interviews with project beneficiaries and beneficiaries of similar benefits in comparison area and qualitative interviews with key project stakeholders.

6.4.1 Farmer participation in FFS

As part of the concurrent monitoring, farmers who had participated in FFS were also surveyed. The FFS sample consisted of both host and guest farmers. Due to the small sample of farmers from comparison villages, they have not been included in the analysis and the findings focus on the feedback on FFS conducted in project area. The graph on the right side presents the proportion of host and guest farmers in the sample.

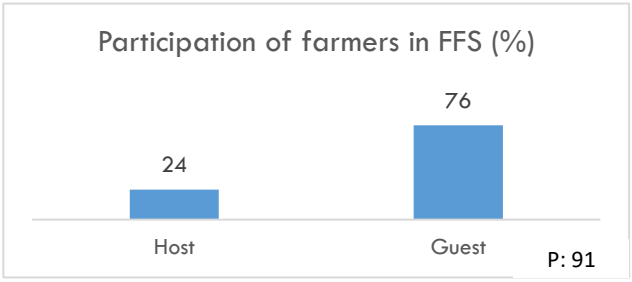


FIGURE 29: DISTRIBUTION OF PARTICIPATION OF FARMERS IN FARMER FIELD SCHOOL

The host farmers who had participated in FFS were asked who had motivated them to participate. It is observed that 70% said that the Agriculture assistant encouraged them to apply as host farmer. 27% said that the FFS Facilitator had encouraged them while 5% said they were motivated by members of VCRMC.

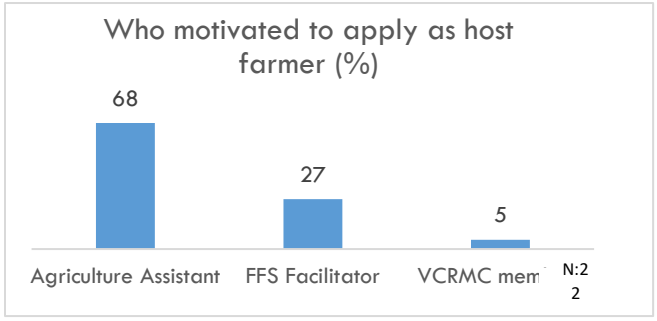


FIGURE 30: PEOPLE WHO MOTIVATED TO PARTICIPATE IN FFS AS HOST FARMER

The host farmers were enquired about the crops for which demonstration was given on their fields. Majority demonstration sessions were for soybean in 23% cases followed by cotton (18%). Also intercropping cultivation was also demonstrated as part of FFS sessions with cotton and green gram (14%), and soybean and pigeon pea (14%) followed by cotton and pigeon pea (9%). One case of pigeon pea

with green gram and one case of pigeon pea with black gram was reported which has been included in others category in the adjacent chart.

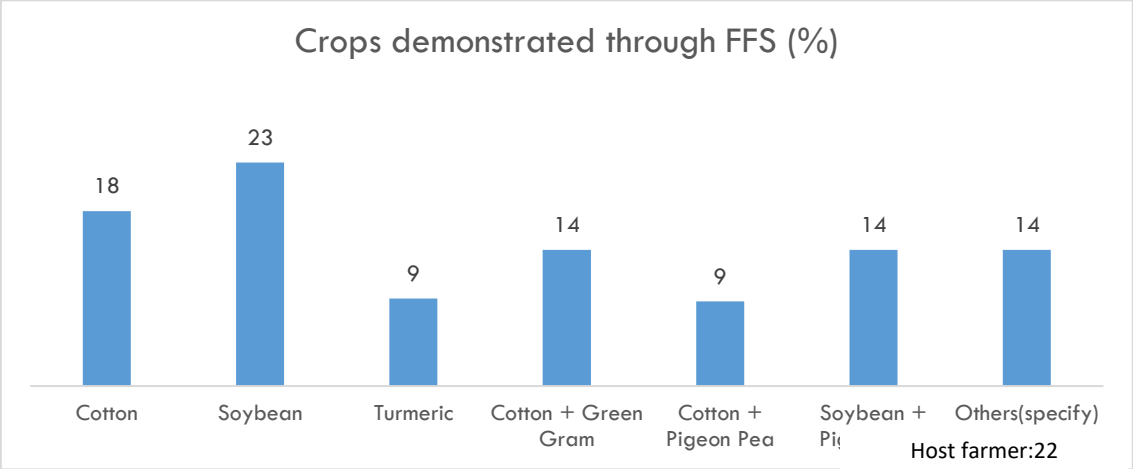


FIGURE 31: DEMONSTRATION OF CROPS DURING FFS

The host farmers from project area were asked if they had received any honorarium from PoCRA for participating and providing their land for FFS. 68% of the host farmers reported that they have not receiving any honorarium yet. 18% reported that it was in process while 9% said they had received an honorarium. One host farmer did not understand and was not aware of any such honorarium.

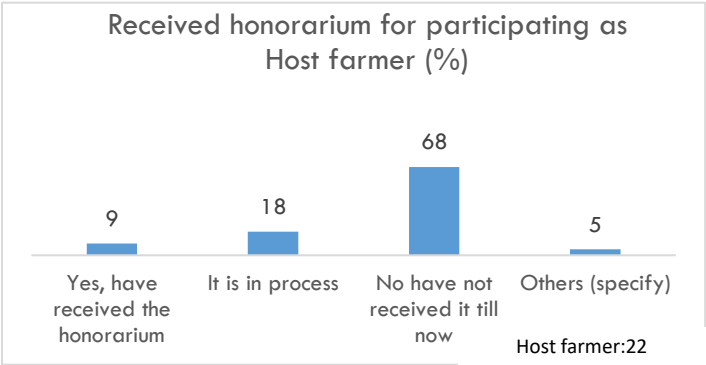


FIGURE 32:PERCENTAGE OF HOST FARMERS WHO RECEIVED HONORARIUM FROM POCRA

All participant farmers of FFS were asked about their key reasons for participating in these field demonstrations. The main reason reported was that new technologies would help to increase their production (by 67%). Further 66% of farmers reported of participating in FFS as they wanted to learn new technologies. 21% participants reported that had participated as the FFS teaches climate friendly technologies, 9% participated as it was suggested by their family or friends. One farmer said he participated as a host farmer to earn extra income.

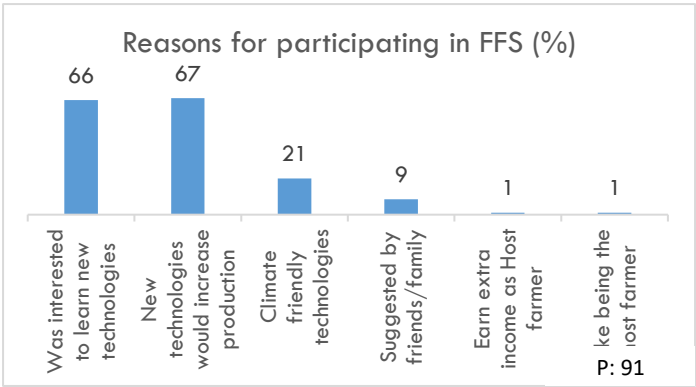


FIGURE 33: REASONS FOR PARTICIPATING IN FFS

In addition, the farmers were enquired about their participation in FFS. 80% of the farmers said they had attended all demonstration sessions conducted till date. Of the farmers who did not attend all demonstrations, the reason for the same was enquired. It was found that 56% had to skip the session due

to some personal work. Some respondents (17%) reported that they did not find the session useful, they found the technology difficult to understand (6%) and other personal commitments (6%). On an average 5 sessions were attended by the FFS participants.

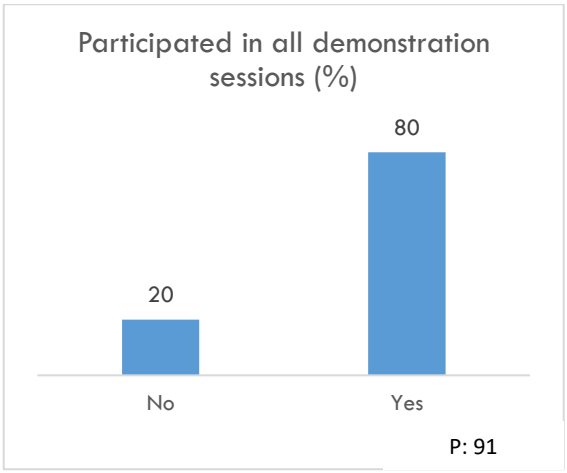


FIGURE 35:PARTICIPATION IN ALL DEMONSTRATION SESSIONS

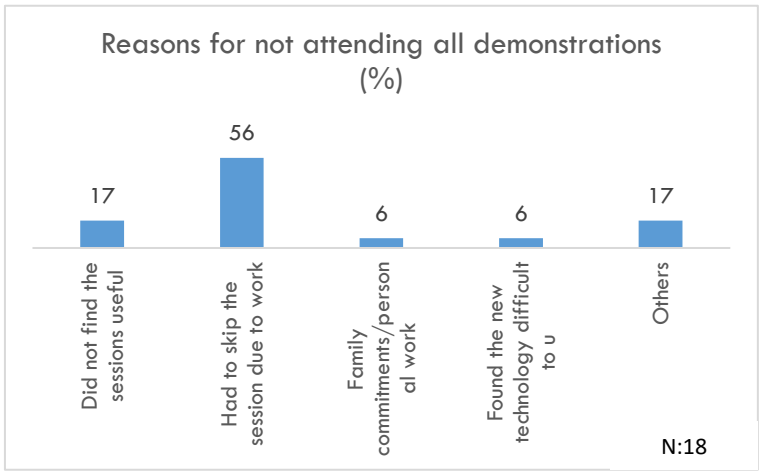


FIGURE 34:REASONS FOR NOT ATTENDING ALL DEMONSTRATION SESSIONS

6.4.2 Benefits of FFS

Further, the FFS participants were asked if they felt that they had benefitted from attending the FFS and also what kind of benefits they think they have received by participating in FFS. 82% of the participants acknowledged they have benefitted from the FFS sessions. As evident from the adjacent chart, better awareness of use of inputs (60%), awareness of good agriculture practices (61%), better soil health 23(%) and increase in yield (43%) are the key perceived benefits reported by the FFS participants.

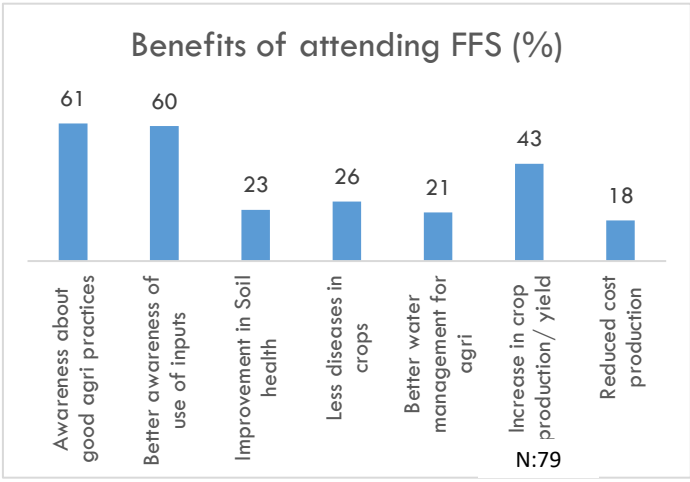


FIGURE 36:PERCEIVED BENEFITS FROM ATTENDING FFS SESSIONS

The reasons for the farmers who did not perceive any benefits from the FFS trainings were that they felt the technology was not useful (25%), the training session was not useful (17%), the technology demonstrated is costly (8%) and others like lack of irrigation for them to use the technology on their own fields.

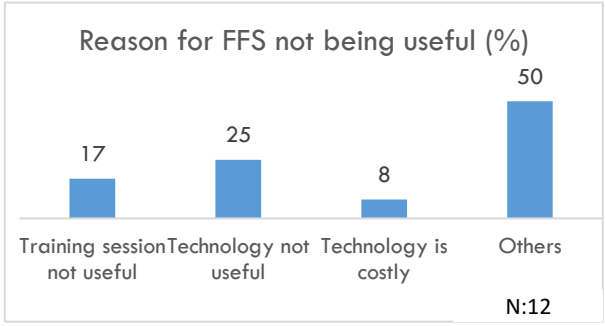


FIGURE 37:REASONS FOR FFS NOT BEING USEFUL

The effectiveness of the FFS was further measured against its perceived help in dealing with climatic vulnerability. 87% farmers said they have faced climate vulnerability (less rainfall, high temperature, dry spell, unseasonal rainfall) in the last one year. Of the farmers who attended FFS, only 1% did not find the technology useful and 3% did not use any technology. 63% of the farmers found the technologies demonstrated in FFS trainings to be very useful in dealing with climate vulnerability while 33% found them to be somewhat useful.

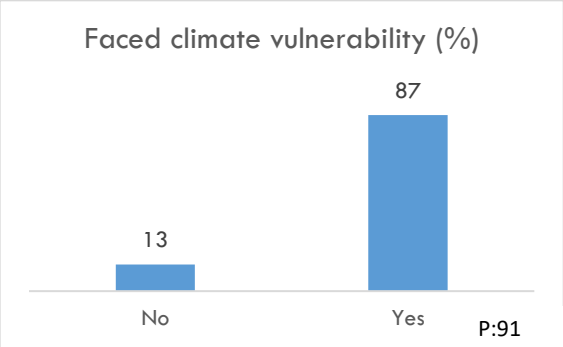


FIGURE 39:FFS FARMERS WHO FACED CLIMATE VULNERABILITY

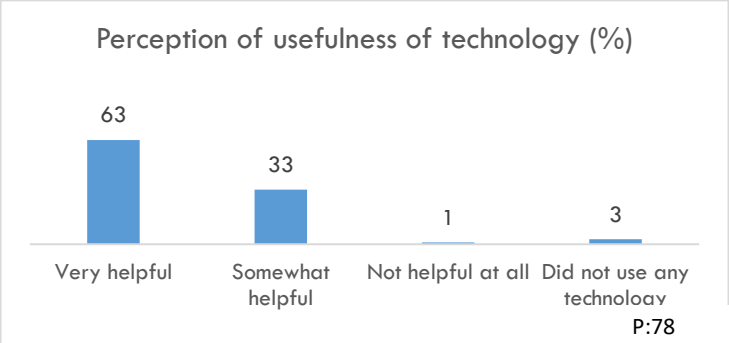


FIGURE 38:FARMERS WHO FOUND FFS TECHNOLOGIES USEFUL DURING CLIMATE VULNERABILITY

The technologies most widely taught under FFS demonstrations are use of climate resilient seeds varieties (66%) and intercropping (50%). Technologies related to cultivation practices such as cultivation on broad bed furrows and contour cultivation were each reported by 24% & 23% of the farmers. Technologies related to irrigation and integrated nutrient management were reported to be taught at the FFS by very few farmers. With respect to adoption of the technologies taught, the most reported were use of climate resilient seed varieties (53%) and intercropping (55%).

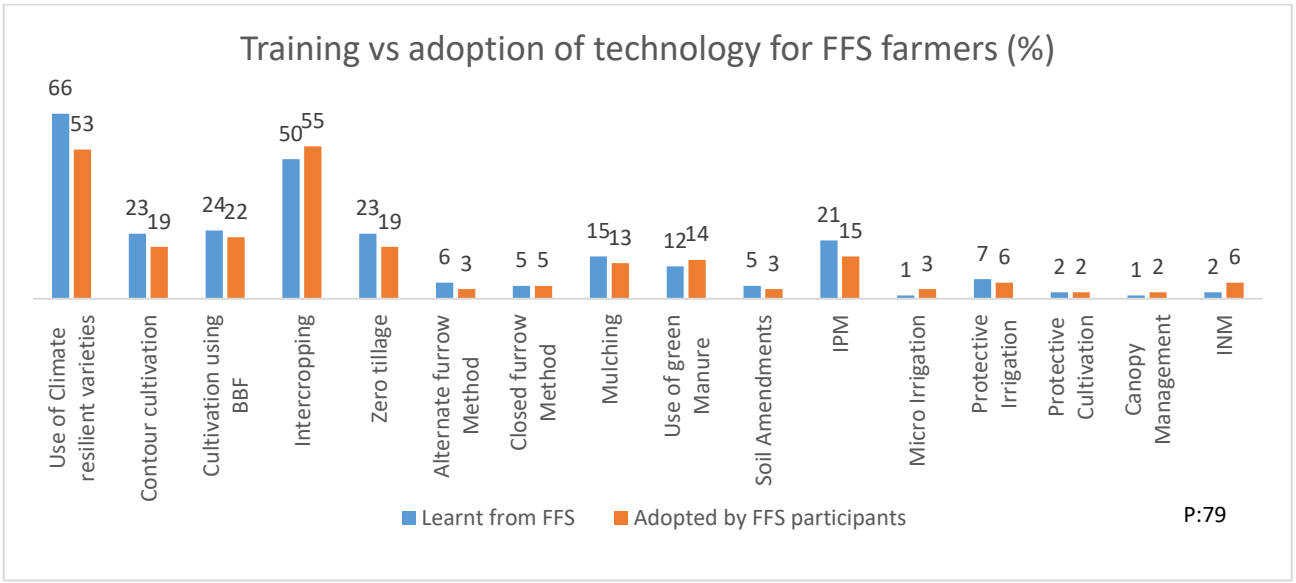


FIGURE 40:TRAINING % AND ADOPTION % OF THE VARIOUS TECHNOLOGIES TAUGHT IN FFS

Apart from farmers of FFS, all beneficiaries were asked if they had received training on these technologies. This was asked across project and comparison arm. It was found that 72% farmers from project area and 61% from comparison area had attended any training session on agricultural technologies. 50% of the respondents from PoCRA said they had received training from sources other than PoCRA while 42% reported receiving training from PoCRA.

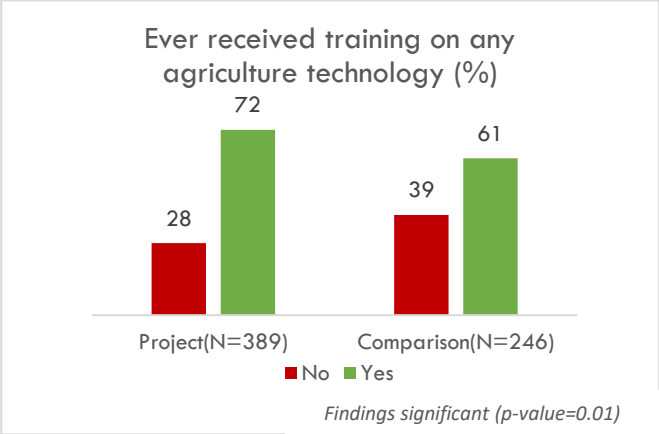


FIGURE 42:RECEIVED TRAINING ON ANY AGRICULTURAL TECHNOLOGY

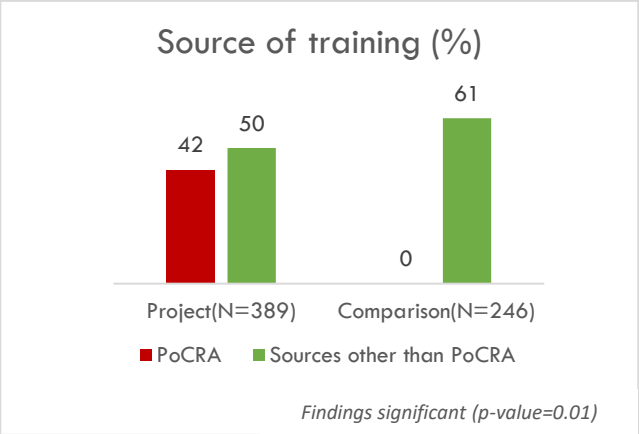


FIGURE 41:SOURCE OF TRAINING OF AGRICULTURAL TECHNOLOGIES

92% of beneficiaries from project arm and 90% from comparison arm said they had adopted any technology from the list provided in the questionnaire. The percentage of beneficiaries adopting the technology is higher for project area (36%) than comparison area (24%) as seen in the figure below.

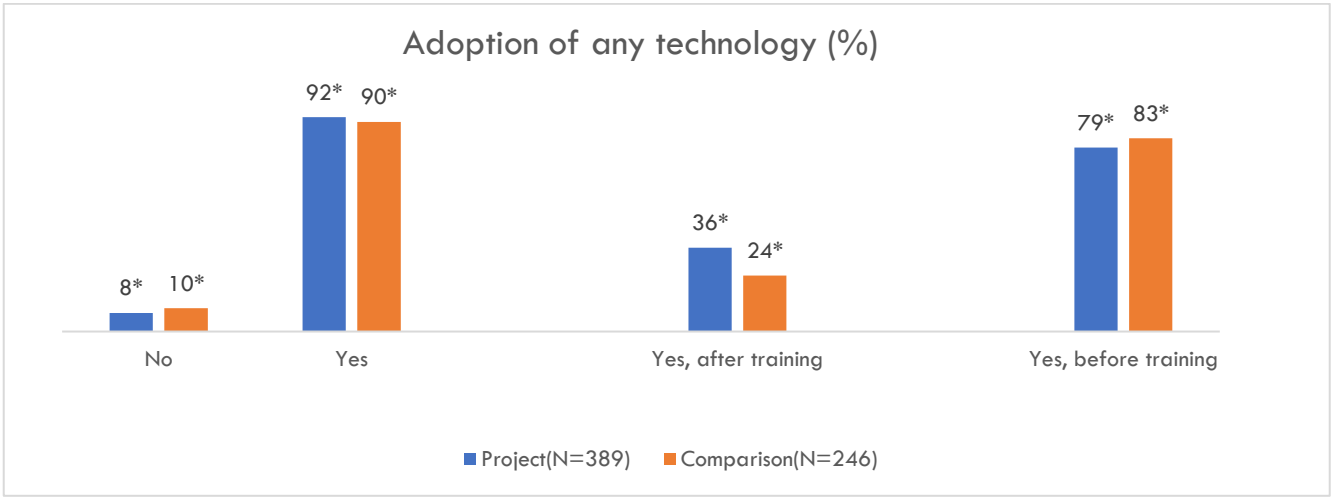


FIGURE 43: ADOPTION OF AGRICULTURAL TECHNOLOGIES

Further, adoption of climate resilient technologies was analysed specifically for FFS guest farmers considering only the technologies demonstrated in FFS. 81% of the guest farmers had adopted any of the climate resilient agriculture technology that was promoted in the FFS session. As evident in the below graph: land preparation, use of machinery, use of improved seed varieties, IPM and intercropping are the most frequently adopted agri technologies by guest farmers.

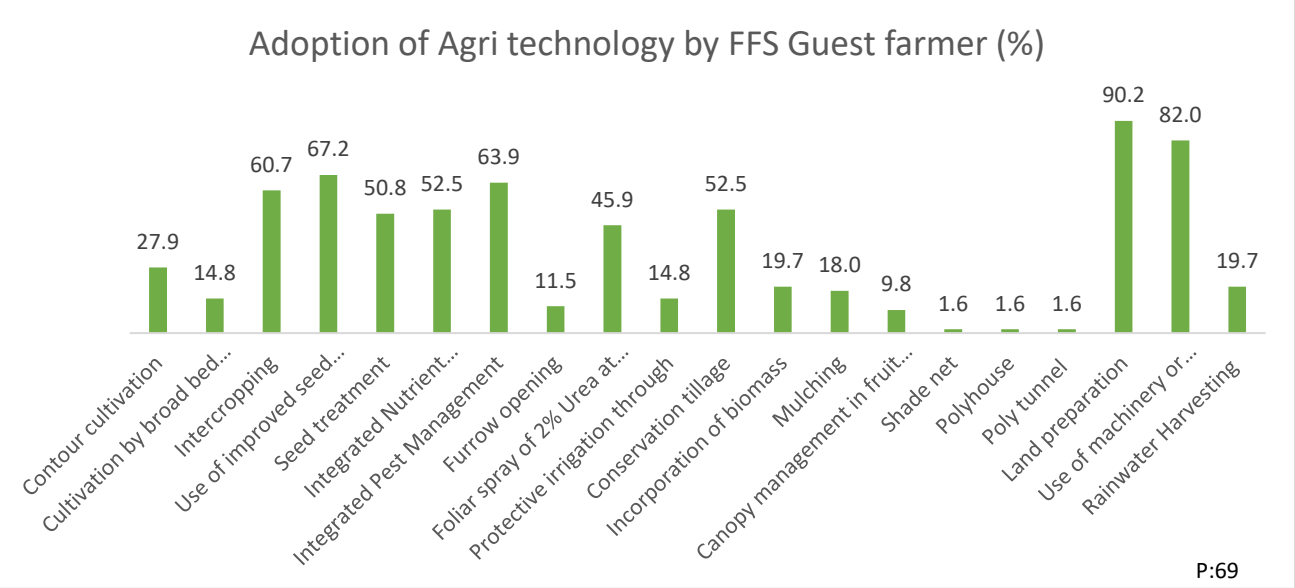


FIGURE 44: ADOPTION OF AGRICULTURAL TECHNOLOGIES BY FFS GUEST FARMERS

6.4.3 Stakeholder Feedback on FFS

Supplementary qualitative feedback was taken for the Farmer Field Schools conducted in PoCRA villages which aimed to build capacity of farmers on climate resilient agriculture technologies. This feedback was taken from CA, AA, FFS Facilitator, FFS coordinator, SDAO and DSAO.

It was enquired that which are the climate resilient technologies that are most frequently demonstrated in FFS sessions. Some of the technologies that were commonly demonstrated in the Farmer Field Schools, in the order of their frequency includes:

- Inter-cropping and Integrated Nutrient Management.
- Broad Based Furrow Technology: This technology is reported to be popular because even if rainfall is scanty it helps in enhancing the soil moisture content holding capacity.
- Seeding procedures including seed treatment and seed preparation
- Fertilizer spraying techniques
- Cost -cutting Techniques for fungicide usage, and to control pest in pulses and cotton.
- Drop application
- Organic Agriculture

The key stakeholders in implementation of FFS including AA and FFS Facilitator were asked about the main criteria which is adopted for selection of host farmers. It was reported that the host framer should firstly be interested in hosting FFS sessions and should be a progressive farmer who should preferably have the knowledge of cultivating crops that will be demonstrated through FFS. Host farmer's farmland should be approachable to other farmers in the village and importantly s/he should have cordial relation with other farmers in the village. It is also important that the onboarded host farmer should be willing to associate with FFS for a minimum period of two to three years. It was reported that usually there is no difficulty in finding the host farmers. In fact, there are more farmers interested in being a host farmer than usually required. This is seen as a prestigious opportunity and thus interest the likes. However, this adds to

the difficulties of the organisers on choosing the Host Farmer. FFS facilitators gave feedback that they along with AA and VCRMC members should be collectively involved in selecting host farmers. Host farmers do not listen to them seriously if the facilitator is not involved in their selection process.

The key strategies adopted to mobilize guest farmers to attend FFS sessions were also enquired. While initiating the FFS in the village, the farmers were informed about the same and the benefits of new agriculture technologies during the gram sabha meeting and also in-person by the VCRMC members, AA and FFS facilitators. For informing the guest farmers about FFS sessions, the most common means include informing participants through phone calls, Wats App messages, SMS etc. which are sent 1-10 days prior to the FFS session meeting. Farmers who are self-motivated and progressive are also requested to spread the word amongst other guest farmers. The FFS facilitators reported that generally FFS sessions are conducted in the morning time that is most suitable for farmers. FFS facilitators reported that participants are provided snacks and also on time stationary including pen/paper/pad etc to motivate them to attend FFS sessions.

Reasons why guest farmers do not attend the sessions was also enquired. The main reasons reported was lack of interest or motivation in some guest as some of them are not convinced of the effectiveness of the technologies promoted. Also, many are not able to attend the sessions are they say that they are busy in own farming and domestic works. It was reported that attendance decreases when FFS demonstration sessions coincide with key stages of farming. Also, sometimes long distances to reach such field become a deterrent for farmers to attend the training. The participation of female farmers was still observed to be limited as many time male members of the HHs do not encourage them to participate and also, they find difficult to take out time during early morning due to HH chores.

The most reported climate resilient technologies adopted by farmers are intercropping, BBF, using chemical fertilizers and pesticides. Seed treatment, IPM (neem ark), INM were also reported to be adopted by some participants. Technologies which are expensive and difficult to implement e.g. mulching have lower adoption rate amongst farmers. Many farmers are still apprehensive in adopting techniques like installing pheromone traps as they have still not understood their benefits and are not convinced. They need to be motivated more.

On enquiring about the difference in yields in project and control plots, higher yield in the project plots compared to control plots was reported by FFS facilitators. The difference in yield ranged from 20-100% in crops of Moong, Cotton and Groundnut. Farmers attribute this increase in yield to better soil fertility of the project plot, better sowing conducted using BBF technique in the project plot as well as better pest management.

Feedback on FFS Application

As part of the second round of concurrent monitoring, feedback was also taken on the FFS application. Overall, the FFS application was reported to be good and helpful. The application was appreciated by FFS facilitators and coordinators for the information related to weather, crop protection from pests and PoCRA project which is conveyed through the same. However, some limitations and suggestions for improvement in the application were also reported. Facilitators mentioned that too many details need to be captured in the application during the FFS demonstration sessions, which reduces their focus on the sessions as they are not able to maintain eye contact with the farmers(Also acknowledged by SDAOs/DSAOs). Challenges in using application were reported in specifically in areas with poor internet connectivity/slow internet speed. It was suggested that offline module of the application should be

strengthened as sometimes data is lost while uploading. Also, data uploading was reported to be very time consuming in case of network issues. It was suggested that the FFS application should be reviewed and details that need to be captured should be rationalized. The length of AESA observation module was suggested to be decreased. It was suggested that the details to be captured should be customized based on the crop. E.g. details like boll/era heads are asked for Tur, which are not relevant to the crop. It was also suggested that the photographs to be captured for each session should be reduced.

FFS co-ordinators, SDAOs and DSAOs were also enquired about how the FFS sessions are monitored. Most FFS co-ordinators reported of having on average two meetings per month (mostly on 1st and 3rd Saturday in SDAO office) with the FFS facilitator to train, motivate them and review their performance. Coordinators mostly rely on FFS app to monitor the FFS sessions as they can track the implementation of FFS sessions from the same. Some of them also reported of taking feedback from the farmers and making surprise visits during the sessions for monitoring them.

Additionally, for improving the effectiveness and implementation of FFS sessions, its key implementation challenges and their plausible solutions were also enquired. Motivating farmers to attend all FFS sessions and ensure adopting of the learnt climate resilient agriculture technologies is still the key challenge. As a solution it is important to put more efforts in motivating the guest farmers about the benefits of FFS session. Also, as mentioned by FFS facilitators, support from AA, CA and VCRMC members is critical in mobilizing and motivating farmers. Further, majority of the interviewed SDAO's and Coordinators expressed concerns about the performance of the facilitators. It was reported that as many facilitators are freshers, they have less practical knowledge. It was suggested that retired agriculture department staff can be recruited to conduct FFS sessions (if feasible), else measures should be taken to build the capacity of the FFS facilitators. Many of the FFS coordinators also reported of instances about delay in receiving of agriculture inputs for the demonstration plots. This can demotivate the facilitators, host and guest farmers therefore it is important to ensure timely supply of inputs .Also, since facilitators must use the online mobile app to note down their observations online during the sessions, it often creates misunderstanding amongst the farmers that he is using the mobile during the sessions. Therefore, we suggest that the information required to be entered in the FFS application by the facilitators should be reassessed so that conducting the FFS session and ensuring farmers understand everything should be the priority. Lastly, identifying the right host farmer is also a challenge for which it is important that support and advice of VCRMC members should be taken to select the most suitable host farmer.

6.5 Community benefits

6.5.1 NRM Community Benefits

This sub- section presents the findings from the concurrent monitoring of the NRM community interventions based on the quantitative interviews with NRM intervention beneficiaries in project area, beneficiaries of similar interventions in comparison area and also from the qualitative interviews with key project stakeholders.

6.5.1.1 Distribution of NRM Community Benefits

As presented above in the sample coverage section, a sample of only 10 beneficiaries of NRM asset were interviewed to get their feedback on the NRM community assets under PoCRA as NRM works have bene initiated in only one of the sampled villages. All these beneficiaries have their land in proximity of gabion structures that will be developed through PoCRA. In comparison area, 66 beneficiaries of NRM assets

were surveyed. The distribution of NRM asset beneficiaries in comparison area was 37% of cement nala bunds, 35% from compartment bunding, 16% from earthen nala bunds, 6% from gabion structure and the remaining of agroforestry, repair of old water storage and CCT.

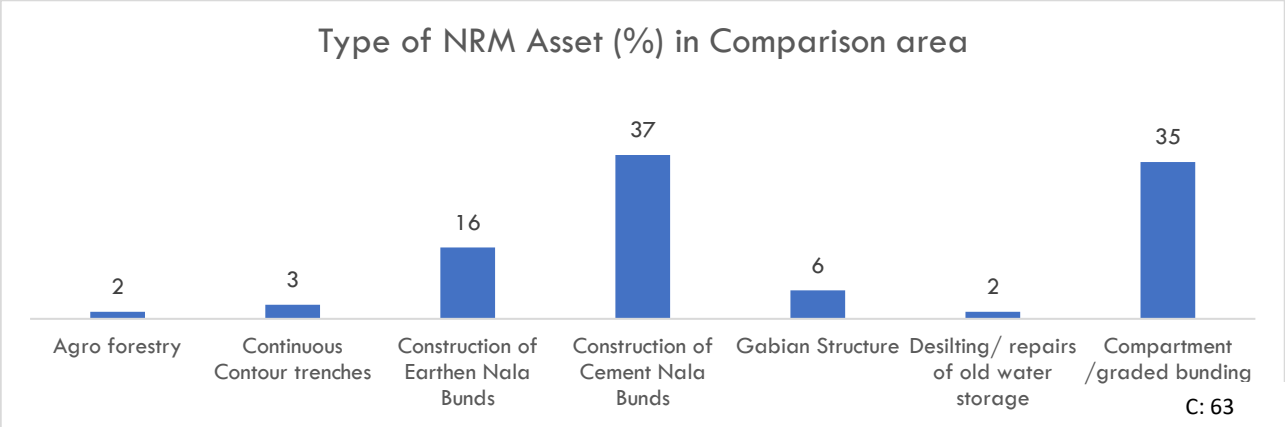


FIGURE 45: DISTRIBUTION OF NRM ASSET IN COMPARISON AREA

The beneficiaries were asked at which stage of construction was the NRM asset. For the gabian structure in project area, construction was yet to start.

6.5.1.2 Decision-making Process

The community beneficiaries were also enquired about the stakeholders who had been involved in the decision making regarding the asset construction. As community benefits would affect the whole village, the more democratic the decision-making process is, the more beneficial it would be for everyone. In project area, half of the respondents reported that VCRMC and members of Gram Sabha were involved in decision making related to asset construction. Only 10% reported that village residents (one out of 10 respondents) with land near the vicinity of the asset had been consulted. In comparison area, 40% of the community intervention beneficiaries said that the village residents with land in the vicinity of the structure were consulted. 32% said the Gram Sabha was consulted whereas 16% were not aware of any such process.

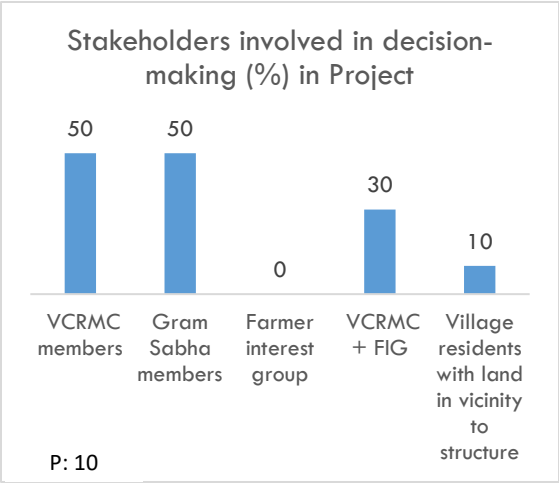


FIGURE 47:STAKEHOLDERS INVOLVED IN DECISION-MAKING IN PROJECT AREA

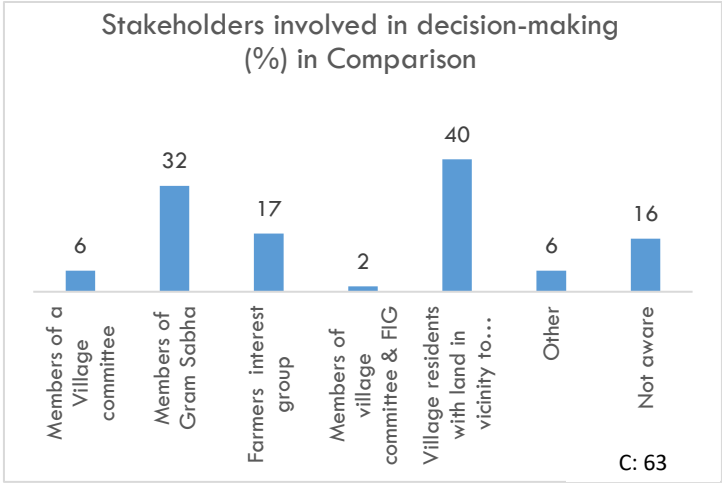


FIGURE 46:STAKEHOLDERS INVOLVED IN DECISION-MAKING IN COMPARISON AREA

6.5.1.3 Perception of beneficiaries

The beneficiaries of the community assets were also asked about their perception of the quality of the assets which were in *constructed* or *under construction* phase. Since the NRM asset had not been constructed in project area yet, this question was answered only by beneficiaries of comparison arm. 62% were very satisfied with the quality of the community asset while 20% were unsatisfied with the quality of the asset quality.

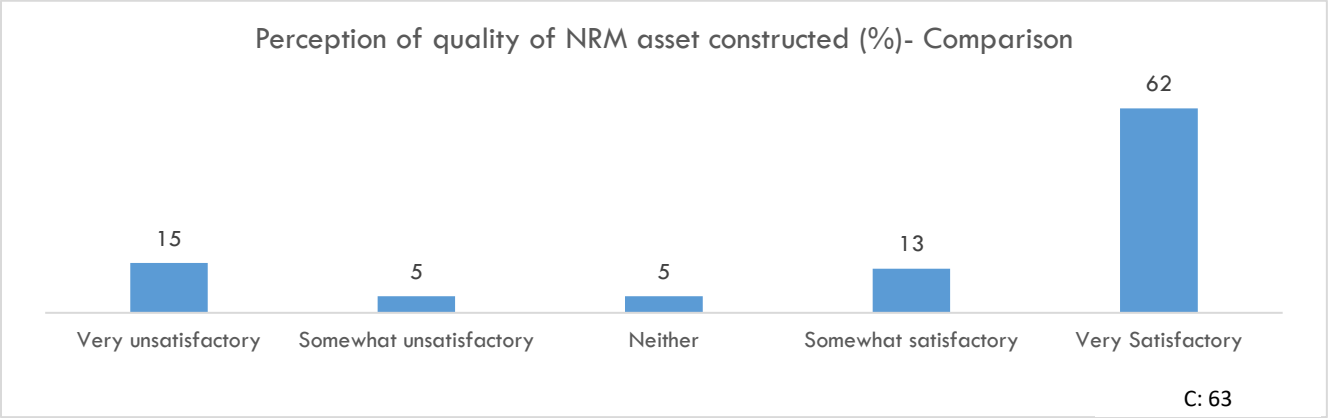


FIGURE 48:PERCEPTION OF QUALITY OF CONSTRUCTED NRM ASSET

When asked about the usefulness of the community assets, 70% of the respondents from project area said they believe that the Gabian structure would be useful for them. In project area, 80% of the beneficiaries were aware of asset that will be constructed in their vicinity and were willing to be involved in its maintenance. Of those willing to contribute, 50% said they would be a part of the structure maintenance committee, 13% they would pay for maintenance and 38% said they would provide labour support.

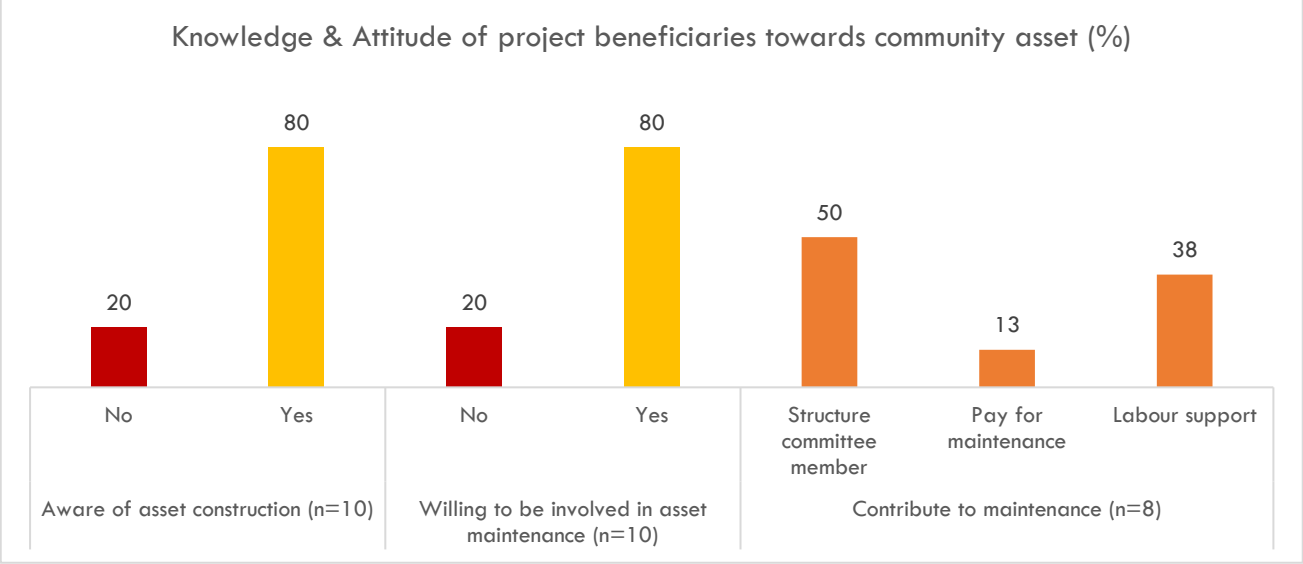


FIGURE 49: KNOWLEDGE & ATTITUDE OF PROJECT BENEFICIARIES TOWARDS COMMUNITY ASSET

In the comparison arm where all the assets were completed, 67% of the beneficiaries reported to be involved in maintenance of the asset. In the comparison arm, from the beneficiaries who acknowledged to be involved in the maintenance of the assets, 26% of the beneficiaries are part of the structure maintenance committee, 36% have paid for maintenance while 31% contributed in the form of labour.

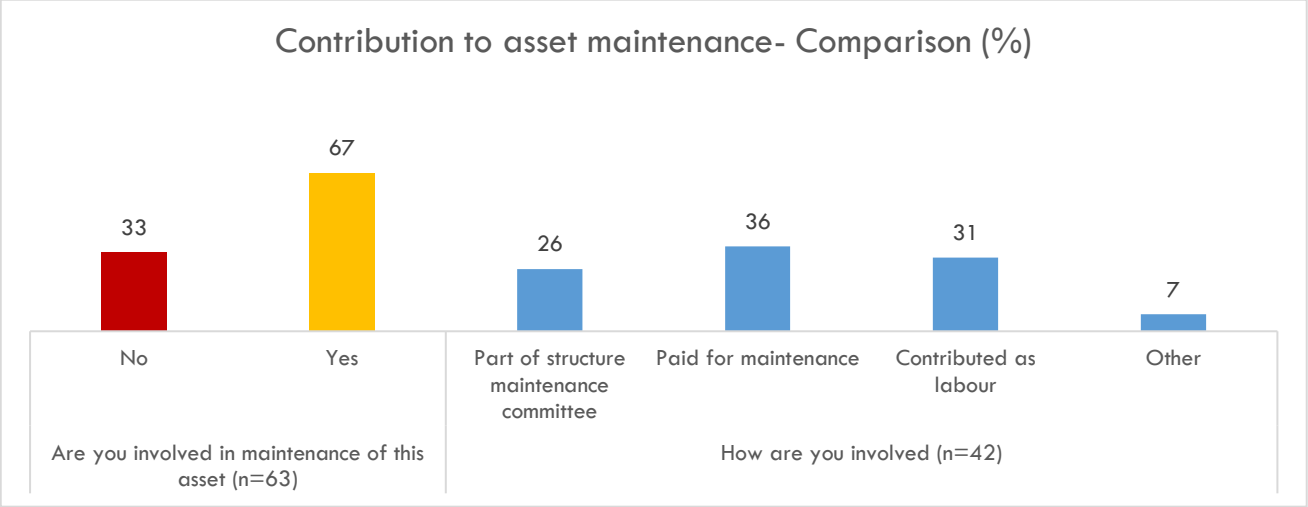


FIGURE 50: CONTRIBUTION TO ASSET MAINTENANCE IN COMPARISON AREA

6.5.2 Community Farm pond

Similar to the feedback on NRM community asset, feedback was taken from beneficiaries of community farm ponds. The beneficiary sample for community farm ponds include 45 beneficiaries from project area and 24 from comparison area. The average number of beneficiaries per community farm pond is four for both project and comparison area. The minimum beneficiary was noted as one whereas the maximum beneficiaries of a farm pond were six in project villages and five in comparison area.

6.5.2.1 Application Process for community farm pond

The beneficiaries of project area were enquired about the status of their application for community farm pond. 23% said it was in the pre-approval stage by SDAO while 23% also reported that they had received the transfer of matching grant. Approximately 40% of the community farm pond beneficiaries from the sample have stated or have completed the construction of community farm ponds.

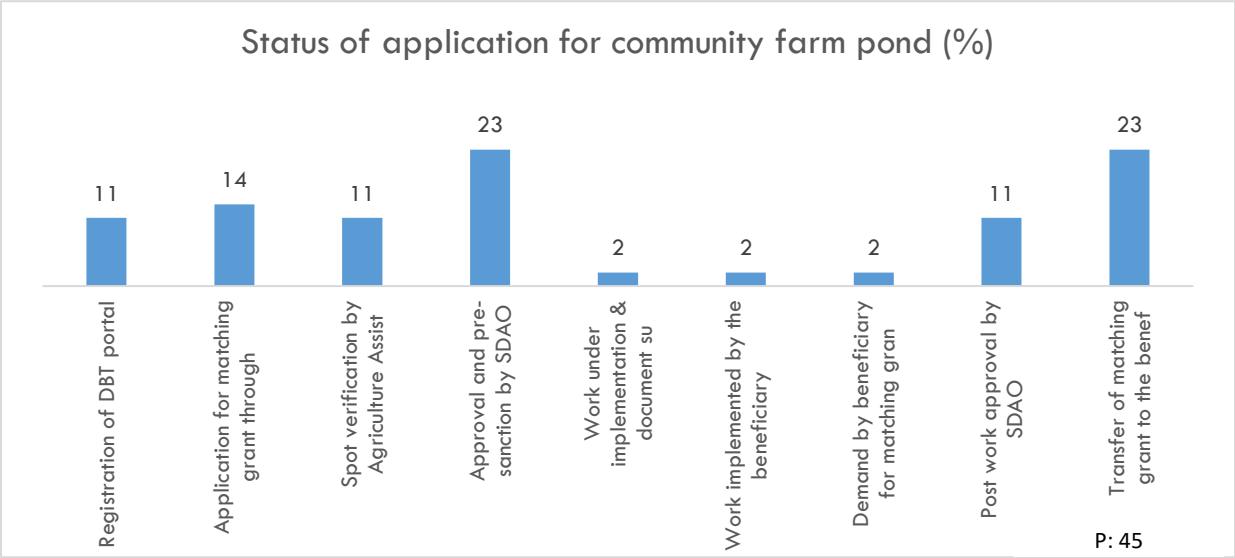


FIGURE 51:STATUS OF APPLICATION FOR COMMUNITY FARM POND

When asked who had motivated them to apply for community farm ponds, 58 % of beneficiaries from comparison arm reported that they were self-motivated to apply while only 40% from project area said

they applied due to self-motivation. Project staff like AA, CA and Krushi tai had motivated to apply for 31% of the applications for project area. VCRMC members were the motivation to apply for 31% of the respondents.

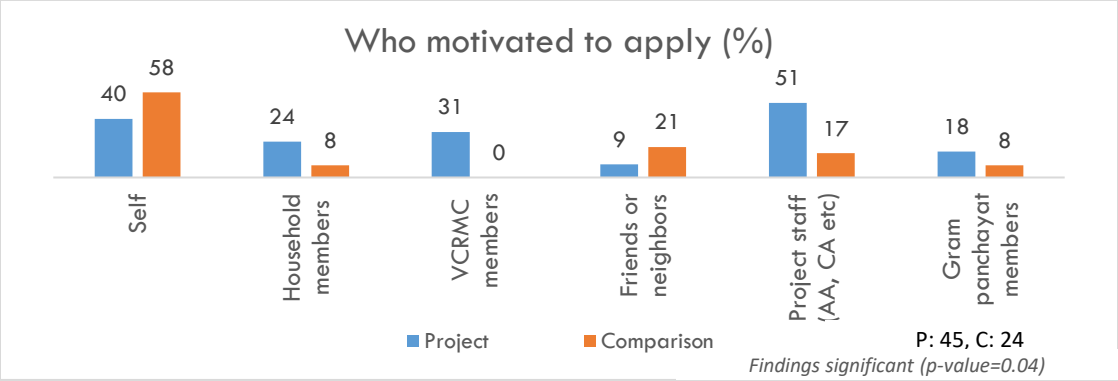


FIGURE 52:MOTIVATION TO APPLY FOR COMMUNITY FARM POND

The beneficiaries were asked who had majorly assisted them in applying for community farm pond. In project area, 36% had applied on their own, 27% with help of e-Sewa kendra, 18% with help of CA and 14% with help of VCRMC. In comparison area, 29% used the assistance of friends and neighbours to apply, 25% applied on their own, 21% applied with help of Gram Panchayat members and 13% with help of e-Sewa kendra and CA respectively.

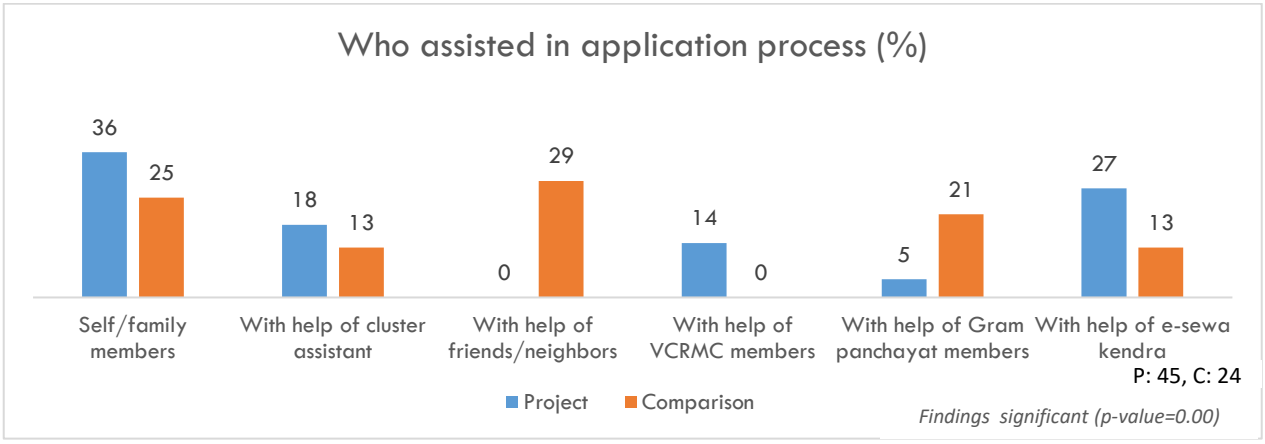


FIGURE 53: PEOPLE WHO ASSISTED IN APPLICATION PROCESS FOR COMMUNITY FARM POND

For the construction of community farm pond, we asked the beneficiaries for their source of fund. In project area, 44% used their own funds (which could be contribution for all applicants for the asset) , 33% took money from money-lenders and 28% loaned the money from their family or friend. In comparison area, a very high proportion (79% beneficiaries) used their own funds, 21% loaned it from their family or friend and 17% loaned it from a money lender. It is alarming to find that only 11% from project area loaned the money from a formal bank whereas 8% from comparison area took loan from a bank and 4% from SHG. It is suggested that mechanism should be developed that facilitation support is provided to the beneficiaries to get loan from formal institutions.

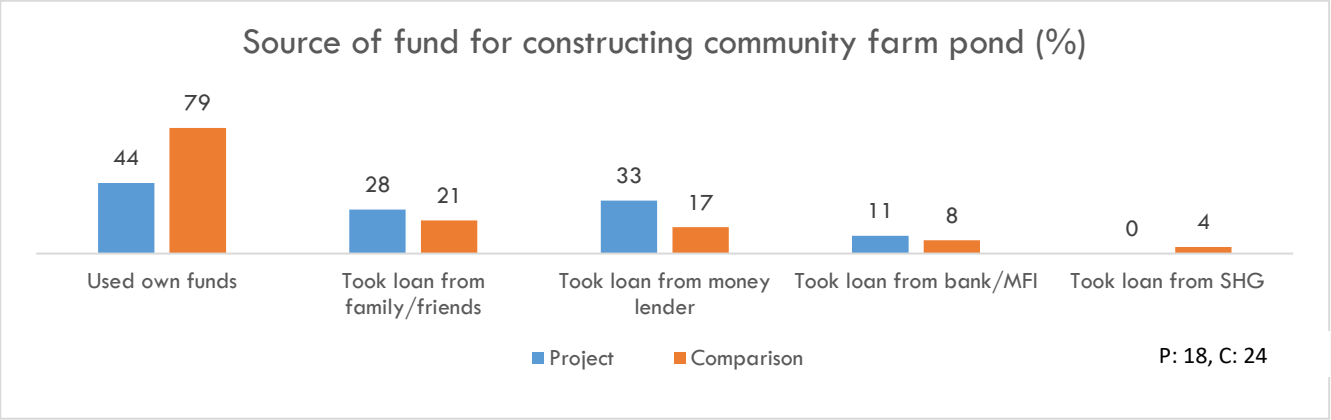


FIGURE 54: SOURCES OF FUND FOR CONSTRUCTION OF FARM POND

From those who had received pre-sanction approval but not yet started work, they were asked the reason for delay in starting the work. 50% said they were currently in the process of arranging funds to begin work, 30% stated they do not have money to invest in the construction, 10% said that they have other priorities for spending the fund.

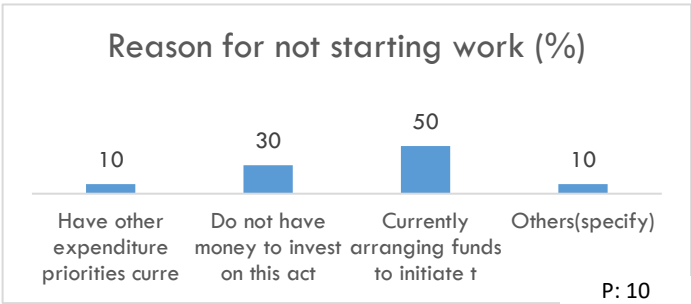


FIGURE 55: REASON FOR NOT STARTING WORK AFTER PRE-SANCTION APPROVAL

The project beneficiaries were asked which project guidelines they found difficult to comply during the application and implementation of community farm pond activity. It is heartening to find that 86% farm pond beneficiaries in PoCRA villages reported that they did not face any issues in adhering to the project guidelines. Those who reported facing issues had faced issues including farm pond site selection (5%),

putting up sign board, construction as per specified size, owning at least 0.6 hectare of land were which the requirements as per the project guidelines.

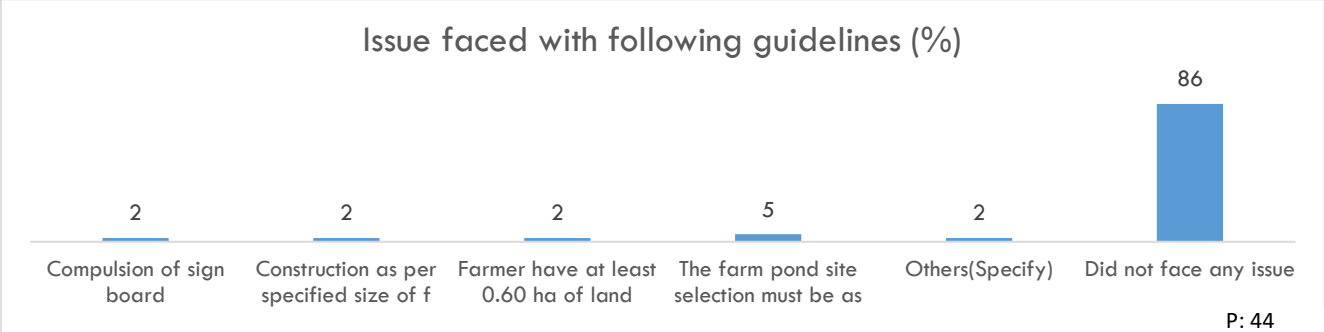


FIGURE 56: ISSUES FACED BY BENEFICIARIES IN FOLLOWING THE GUIDELINES FOR FARM POND CONSTRUCTION

6.5.3 Stakeholder feedback on Community benefits

Stakeholder feedback was taken on the implementation status and challenges for community interventions under PoCRA. Overall, it was found that the NRM community activities are under planning phase in most of the villages. Micro planning agencies are to be nominated in the PoCRA phase II villages and subsequent to the micro planning DPR has to be prepared for these villages. For Phase I villages, in some cases, it was reported that the cost estimation is being done by AA and in some cases DPR is under approval stage. Mainly three key reasons were reported for delay in community activities. Firstly, work was halted in between due to election code of conduct that was put in place during general elections and Vidhan sabha elections conducted in 2019. Secondly, delay had been reported in the cost estimation and e-tendering processes. During the interview one of the DSAO's shared that estimates of expenditure goes to VCRMC directly instead of AA, therefore AA avoids making estimate and send it directly to TAO. Lastly, in some cases, there was difficulty in finding potential sites of check dams and *earthen nala* bund as much of the area is already saturated under the various watershed schemes. Some of the cases also involved land invasion as the reason for delay in community works. Enhancing cohesion amongst the community to take forth community work is essential.

Another feedback which was received from the community was that flexibility should be provided to develop customized projects which can help to access the water availability of the farmers. E.g. In Hamrapur village, Vaijapur taluka, Aurangabad a river flows near their village and water is available in the river for 8 months. If PoCRA can support to build a community harvesting structure and water can be drawn from the river, can solve the issue of water availability for the nearby farmers.
Some of the challenges and proposed solutions are as follows:

- *Community work has not yet been initiated in most of the villages*
  It is suggested that there should be an impetus to increase the implementation speed of the community interventions and NRM activities planned under PoCRA. As also observed based on the expert visits, focus should be more on rejuvenating the existing watershed structures which are not in good condition.
- Time lag in receiving matching grant for community farm pond.
  It has been reported by a few beneficiaries and VCRMC members that time lag if any in receiving matching grant becomes very challenging for community farm pond beneficiaries as the investment required for constructing a community farm pond is very high. If this happens frequently, it also becomes a demotivating factor for other potential applicants. It should be ensured that the matching

grant is received withing the stipulated time period. Some beneficiaries also complained that the subsidy for community farm ponds should be increased.

- *Incorrect site selection during micro planning also lead to delay in work.*
  Site selection should be done carefully while ensuring agreement of all farmers in its vicinity of the community asset. Also, it should be ensured that site selection is done by technical persons during the micro planning phase.
- *In many cases, farmers (specifically the ones who have low land holding) don't allow community works to be conducted on their land. This problem is further aggravated in cases of unclear demarcation and border of farms.*
  Site selection should be done carefully while ensuring that all farmers in its vicinity are fine with development of community asset.
- *The villages have limited suitable sites for major activities of soil and water conservations such as check dams and earthen nala bunds.*
  As also mentioned in the first point, focus should be given on existing soil and water conservation sites for repairing and maintenance activities such as desilting, leakage repair etc. This will increase the capacity of existing structure for water storage.

6.6 PoCRA supported FPO beneficiaries

One of the key components of PoCRA is to strengthen the existing farmer producer organizations or companies in their entrepreneurial ventures by providing them financial support. This is aimed to strengthen the post-harvest activities and value chain of the major crops and to strengthen the supply chain for the climate-resilient crop varieties in the project area. The FPOs that have applied to receive support or have received support through PoCRA were sampled from each district and feedback of their members were taken to understand the current activities taken by the by FPOs and get feedback on the support received through PoCRA till now. For this, 71 members of different FPOs were interviewed. 90% of the members reported that their FPOs are currently operational. On enquiring if the members had received any training through their FPO/FPC, 68% of the respondents acknowledged the same. Topics of training included farming practices through FFS, marketing of produce, seed treatment and seed processing. The crops on which training was received were pigeon pea, cotton and soybean.

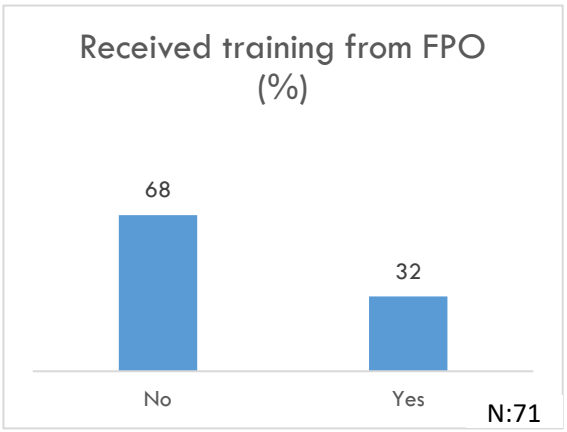


FIGURE 58: MEMBERS RECEIVED TRAINING FROM THEIR RESPECTIVE FPO

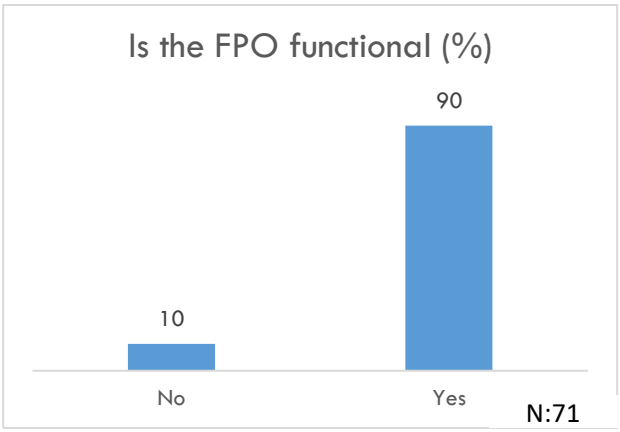


FIGURE 57: MEMBERS REPORTING THEIR FPO TO BE FUNCTIONAL

Activities that these FPOs were engaged in were mostly aggregation of produce (reported by 73% respondents) and providing its members with agricultural inputs (reported by 66%). Only 39% said that their FPO provided them access to market and 39% said that their FPO was also involved in value-addition of produce. A mere 17% acknowledged that they had received training on best agriculture practices through their FPO. Topics of training included training for better production of pigeon pea, cotton. Seed treatment, training on marketing of produce and soybean processing, turmeric processing and book-keeping was also listed by the FPO members who had received training.

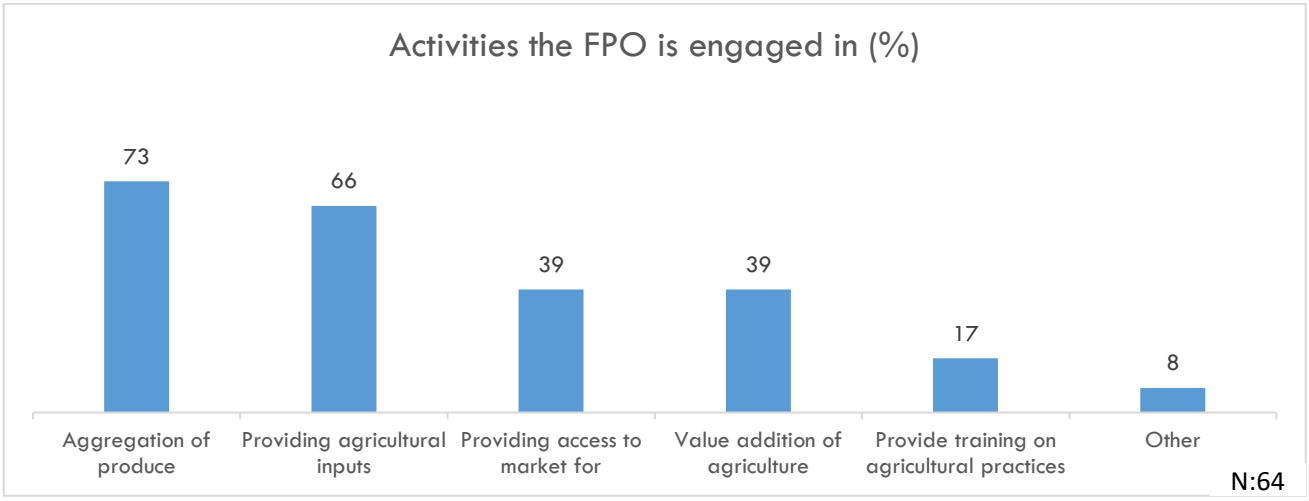


FIGURE 59: ACTIVITIES POCRA SUPPORTED FPOS ARE ENGAGED IN

The members were also asked of the facilities and services they received from their respective FPOs. 42% said they received marketing support from their FPO in selling produce. The same proportion of responses were received for members who said they received access to equipment and tools from their FPO. 33% of the respondents reported of purchasing seeds, 17% received services of grading and sorting their produce, 17% received service of converting their produce to a value-added commodity and 8% members procured chemicals through their FPO use.

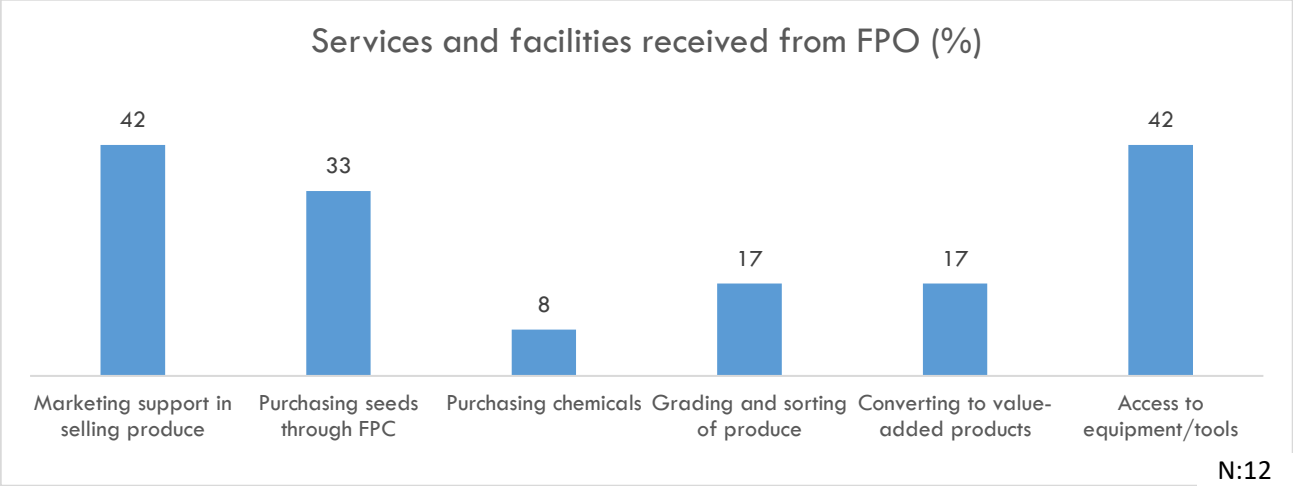


FIGURE 60: SERVICES AND FACILITIES RECEIVED BY MEMBERS FROM THEIR FPO

Further the FPO members were asked about the support that they will be receiving from PoCRA. 55% of the farmer members were aware of financial support that will be received or has been received under PoCRA. Of those who were aware of financial support, 59% said their applications were under processing and 36% were still in application phase.

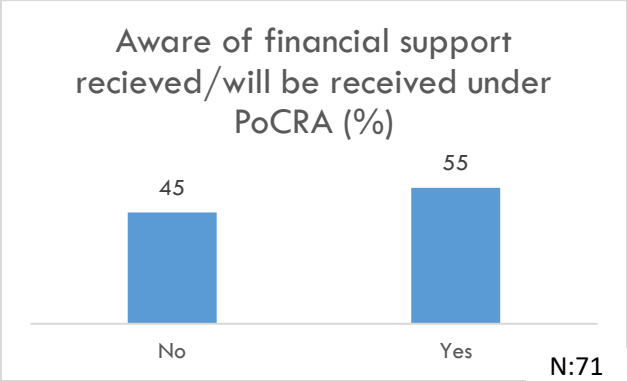


FIGURE 62: FPO MEMBERS AWARE OF FINANCIAL SUPPORT

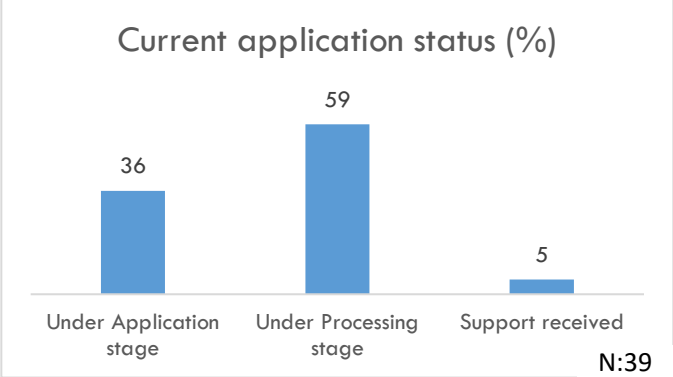


FIGURE 61: STATUS OF APPLICATION OF FPO FOR FINANCIAL SUPPORT

The members were further enquired about the utilization plan by their FPO after they will receive financial support from PoCRA. 52% said their FPO will purchase machines for value-addition. This indicated that the FPOs see the market value of processed produce and want to increase their income by value addition in their produce. 30% said their FPO will utilize the fund for constructing a building for their FPO. 7% said they would purchase land for their FPO.

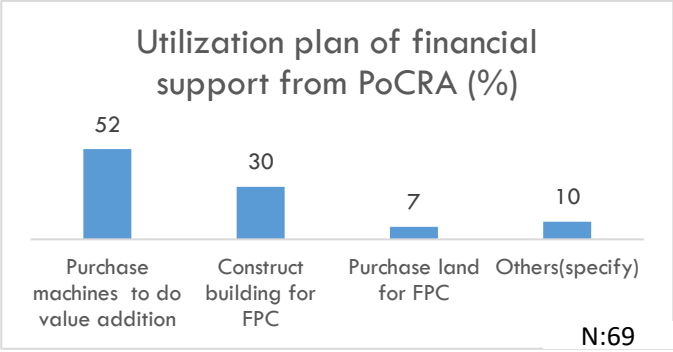


FIGURE 63:FPO UTILIZATION PLAN FROM POCRA FINANCIAL SUPPORT

The respondents were asked what benefits they would accrue when their FPO would receive support from PoCRA. Better price for produce in the market (37%), better access to markets (33%) and increase in income by selling produce post value-addition (30%) were the main benefits perceived by the members.

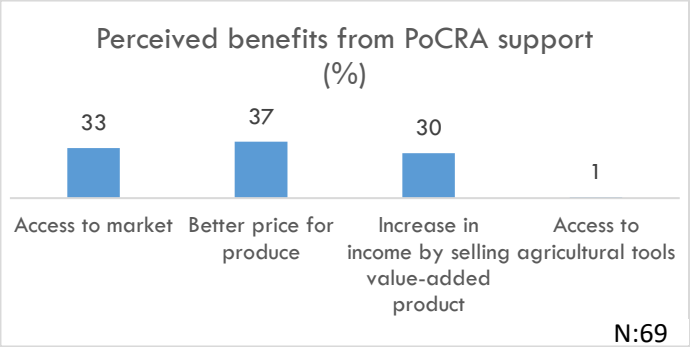


FIGURE 64:PERCEIVED BENEFITS FROM POCRA SUPPORT

6.6.1 Stakeholder Feedback on FPO/FPC Support under PoCRA

Feedback from representatives of FPOs and other key stakeholders like PS Agribusiness, division and district level officials was taken to understand the current status of implementation and the implementation challenges faced in the FPO support component of PoCRA.

On enquiring about the current activities undertaken by FPOs it was found that most of the FPOs are currently involved in produce aggregation, buying seed and fertilizers in bulk to supply to tier members, cleaning, grading, sorting, seed processing. Some are also engaged in processing of cotton to thread, processing haldi, toor dal and moong dal. When enquired about the further planned activities, the surveyed FPOs reported of planning to expand their activities into seed production and processing, value addition and processing, expanding business and activities through support for infrastructure development, machinery purchase for grading, sorting and value addition. When enquired about the current status of application, most of the FPOs are in proposal development stage and in application stage.

When status of the application support was further asked, it was found that almost all the FPO's are in the pre-approval stage though some have received pre sanction. One FPO reported that they have got the loan and have almost purchased the asset. Most of the FPOs have applied for grants to build their godown/infrastructure, or getting food processing machinery for processing soyabean, corn, udid, moong. Some of the other activities which FPOs plan to do include seed processing, purchase agri-equipments like rotavator, thresher, tractor, plough and chaff cutter. The loan application amount ranged from INR 20 lakhs up to 1 Crore with the average loan amount of INR 60 lakhs.

It was also enquired from the FPO representatives that what is their strategy for arranging the balance fund. Most of the FPOs reported that they plan to arrange the balance funds through member shares. One FPO reported that they would raise the funds by getting a contribution of INR 1000 per member. In another such case, an amount of INR 16 lakhs was reported to be collected for investment. Some of the FPOs reported of arranging balance funds through last year's profit and through bank loans. One FPO also reported will take money from money lender if not arranged through other sources.

Feedback of FPO representatives was also taken on the application process and the support they have received till now. Most of the FPOs acknowledged the support received from PoCRA project staff in preparing the project proposals. Almost all FPO representatives reported that the behaviour of the staff to was good.

There was a mixed response in terms of ease in filing application. While some found it easy, other reported the process to be complicated and cumbersome. Some FPOs also highlighted the application

process to be slow. One of the FPOs from district Jalna mentions that they had to repeatedly visit approving authorities and the approvals have not yet been done, despite 7 months of follow up.

Further, the FPOs were asked about the additional support they expect from PoCRA. Facilitation support to apply for bank loans was reported to be most required by the FPO representatives. Currently, the FPOs are finding it very challenging to get bank loans sanctioned. In this case, it was suggested that criteria and the percentage amount required for bank loan should be relaxed. Though feasibility of this suggestion needs to be assessed. The other kind of support suggested were training by experts on improving and enhancing post-harvest activities, training on new value addition activities, and for building their capacity on business management and for strengthening their market linkages. Exposure visits to other institutions carrying out value addition activities and seed processing were also suggested to be helpful in strengthening FPOs. As mentioned above, getting bank loan was the main challenge faced by all FPOs in getting financial support from PoCRA. FPOs members shared their difficult experience in realising loans from the banks. Most FPOs are facing low credit scores since they are scored under agriculture projects. With limited collaterals available, given that most of the FPOs are of small holder farmer members, banks do not approve their loans.

Feedback on FPO functioning based on Agribusiness expert's visit

To understand the operational status of farmer producer organizations and to understand the challenges faced by them, two Farmer Producer Organisations were visited by the agribusiness expert from our team. The two FPOs visited were Pradnyasheel Taruna Farmer Producer Company Limited, Village Dhanaura and Wakodi, Kalamnuri, Hingoli and Nagnath Farmers Organic Producer Company Limited, Village Devala and Turk Pimpri, Aundha, Hingoli. Both the FPOs were found to be legally compliant and have very well identified and branded their product. Pradnyasheel is dealing with Soybean, Tur Dal and Nagnath FPO is a seed production and turmeric power producing and selling company. Both the companies have functional board and active membership base.

Based on interaction with their board and general members, the below challenges were identified. The recommendations to address these challenges have also been provided below each identified challenge

1. Lack of capacity of Board members: The board and Director/CEO lacks capacity on business development. Both the companies were started because of support provided though different government schemes. Board and Director/CEO were not very clear on their five-year plan.

Recommendation: The SIYB (Start and Improve Your Business) training for Board and top management team is recommended. The SIYB program (conceptualized and implemented by ILO) is structured into four separate training packages, which are designed to respond to the progressive stages of business development. These four training packages have been mentioned below

- Generate Your Business Idea (GYB) is intended for people who would like to start a business, and who, through the training, develop a concrete business idea ready for implementation.
- Start Your Business (SYB) is for potential entrepreneurs who want to start a small business and already have a concrete business idea. The program is a combination of training, field work and after-training support, and helps participants assess their readiness to start a business and to prepare a business plan and evaluate its viability.
- Improve Your Business (IYB) introduces already practicing entrepreneurs to good principles of business management. Its six modules (marketing, costing, buying and stock control, record keeping, planning for your business, and people and productivity) can be taught individually or all combined in a full course.
- Expand Your Business (EYB) enables growth-oriented small enterprises to develop a business growth strategy through training interventions.

The SYB and IYB packages also include the SIYB Business game, a practical simulation tool to help participants understand the realities of starting and running a business. The EYB business game simulates an expanding business during training to help participants experience the impact of strategic decisions on their business operations.

2. Business plan: Both the FPOs did not have detailed business plan which is very much required for business planning and growth of the company over the years. The management of these FPOs currently do not have the understanding and capacity to develop business plan.

Recommendation – The project supported FPOs or applicants should be provided technical support to develop their business plan. They can be supported through PoCRA staff district staff and by engaging services from expert organizations that do business planning for small businesses and FPOs.

3. Market linkages – On interacting with these FPOs, both of them reported market linkage as their biggest challenge. They reported of facing challenges in both wholesale and retail market. In wholesale market they find difficulty to compete with their competitors on pricing, whereas in retail market, developing a brand image is a major challenge.

Recommendation – FPOs dealing with same produce should aggregate their product and market it as one brand. E.g., they can be allowed to market their produce under a brand formulated by PoCRA (though several technical and legal aspects need to be studied for assessing the feasibility of the same). This will allow them to compete with their competitors in a better way.

4. Taxation - Pradnyasheel Taruna Farmer Producer Company Limited is facing problem dealing with GST. Legal advisors charge huge fee for complying GST and there are fine for non-compliance.

Recommendation - Board members of the FPOs should be trained on financial management including tax compliances so they may file taxes themselves and their dependency on legal advisor is comparatively less.

5. Migration of members - Members migrate to cities for better employment and women at home bear double burden of work.

Recommendation- FPOs should be managed efficiently to make an attractive return so that migration of members to the cities is restricted.

6. Working capital - FPOs lack working capital required to run their operations smoothly.

Recommendation - Capacity of FPO management should be built in a way that they make bankable proposal and get loans from bank or other financial institution. Support from PS agribusiness and specialized agencies should be provided to develop these bankable proposals.

7. Seasonal work – As the major activity taken up by FPOs are aggregation and selling, seed processing etc., the FPOs are not working entire year and their maximum occupancy is for 6-8 months.

Recommendation - FPOs should include some business-like input supply that can generate revenue for them in lean phase. For this based on strong business planning its required that they have the working capital and technical know-how to carry forward this activity.

8. Interrupted electricity supply: It was reported by the FPO members that the irregular supply of electricity in their area is a major challenge for running their processing units. Interrupted electricity supply keeps processing units idle for more than 12 hours a day.

Recommendation – Using solar power supply support can be explored. Facilitation support should be provided to FPOs to get benefits of installation of solar from other government schemes e.g. from MNRE department.

6.7 Feedback of SHG members that are supported or will receive under PoCRA

One of the components of PoCRA is to support SHGs in promoting primary processing and supply of agriculture inputs and equipment. To understand the status of SHGs that will be/are supported by PoCRA, 44 members of different SHGs that will be supported under PoCRA were surveyed. The SHG members reported that most of these SHGs were formed in 2018 (39%) and 2019 (27%).

The SHG members were enquired if they have received any training through their SHG. 77% of the members said they did not receive any training from the SHG. Further it was reported by 80% of the members that their SHG is not involved in any income generating activity currently such as incense making, papad, daal mill etc.

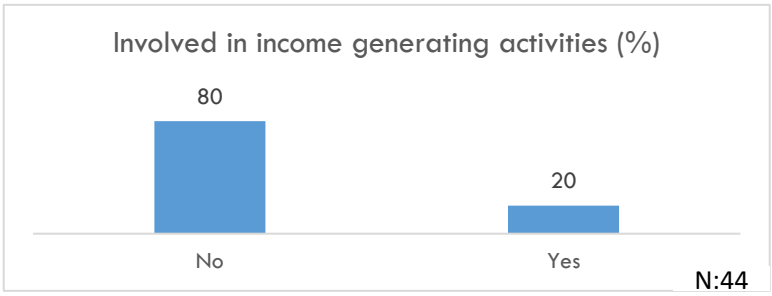


FIGURE 65:PERCENTAGE OF MEMBERS WHOSE SHG IS INVOLVED IN INCOME GENERATING ACTIVITIES

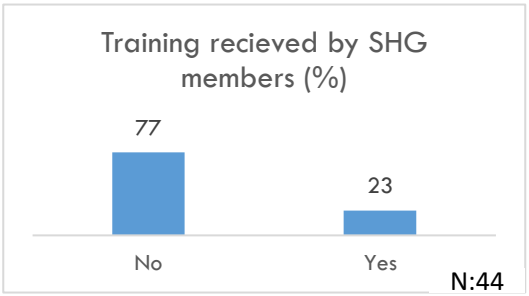


FIGURE 66:PERCENTAGE OF MEMBERS WHO RECEIVED TRAINING FROM THEIR RESPECTIVE SHG

When asked about the frequency of saving done in their SHG, 68% members said that they save on a monthly basis. 30% reported that no saving is being done by their SHG currently. The mean saving was reported as INR 345. 66% of the members reported that they have not received any services from the SHG. 18% said they received access to agriculture equipment and tools, 14% said they were able to purchase seeds through the SHG and 11% said they received support in selling produce in the market. It can be analysed that currently SHG supported activities under POCRA are in early phases and need to be pushed to achieve the project objective.

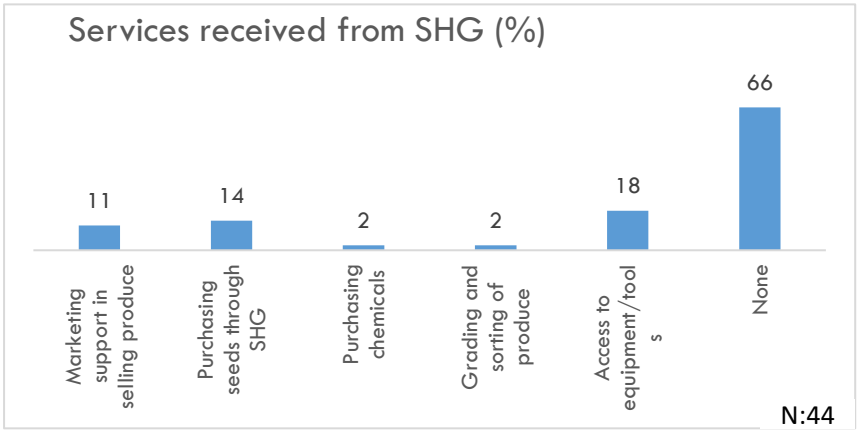


FIGURE 68:VARIOUS SERVICES RECEIVED BY MEMBERS FROM THEIR RESPECTIVE SHG

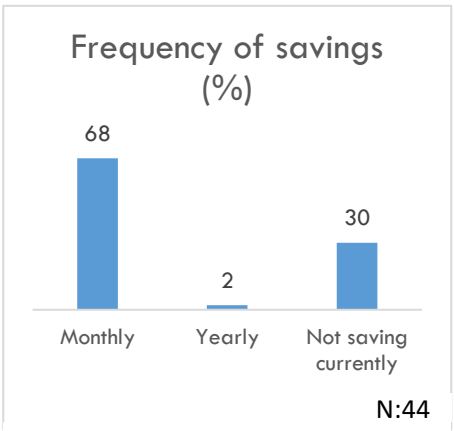


FIGURE 67:FREQUENCY OF SAVING OF MEMBERS OF SHGS

Of the members interviewed, 45% were aware of financial support being provided under PoCRA for SHGs. The activities which the SHG members reported that they plan to initiate with PoCRA support include renting farm machinery, supplying cattle feed and constructing farm pond.

6.8 Satisfaction on different project related parameters

This sub-chapter presents the findings of the feedback of the beneficiaries on the micro planning process and also the perception of the beneficiaries about different parameters related to implementation of PoCRA. This section provides further insights on how the beneficiaries feel about the different projects under PoCRA, process of getting benefits under PoCRA, satisfaction from the support received from VCRMC members and also satisfaction from the support received by project staff.

Beneficiary Participation in Project planning

As micro planning activity has been completed in Phase I villages, the project beneficiaries from these villages were asked if they were aware of microplanning. 27% of the beneficiaries were aware of microplanning done in their village. Of those who were aware, 48% of the beneficiaries reported that they or a family member had participated in the micro planning process. On enquiring beneficiary perception about equity in the VCRMC committee, it was encouraging to find that 73% of the beneficiaries acknowledged that the VCRMC in their village represents all sections of society, which points towards a more democratic form of governance. Of the members who acknowledged that they or their family members participated in village development plan, 91.6% found water budgeting to be very useful or useful.

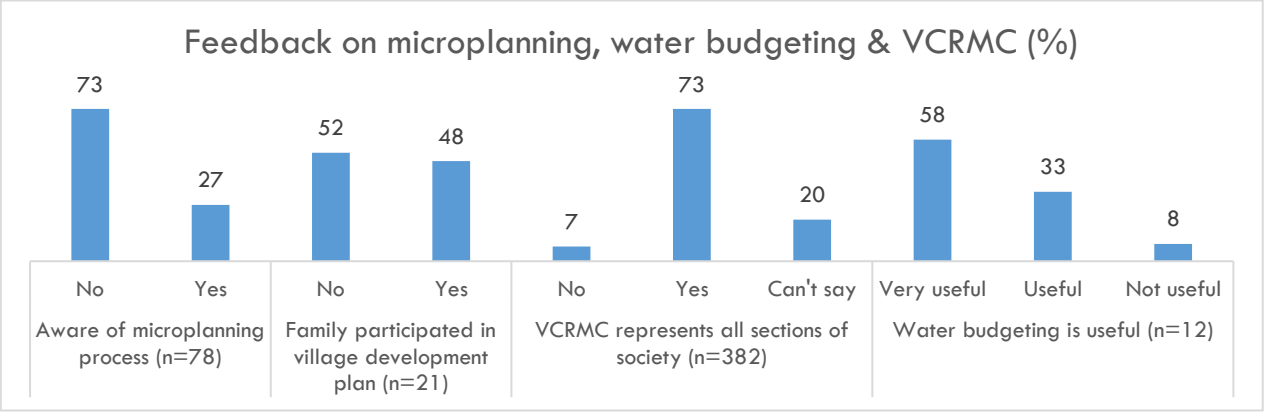


FIGURE 69: FEEDBACK OF BENEFICIARIES ON DEMOCRATIC CHARACTERISTICS OF VARIOUS COMPONENTS OF POCRA

Satisfaction with Microplanning

Overall, 62% of beneficiaries from project villages were satisfied with the microplanning process with 33% of the beneficiaries *somewhat satisfied* and 29% of the beneficiaries *very satisfied* with the microplanning process conducted in their village. The percent of responses unsatisfied with the microplanning process are 34%. 5% of the beneficiaries were indifferent either way.

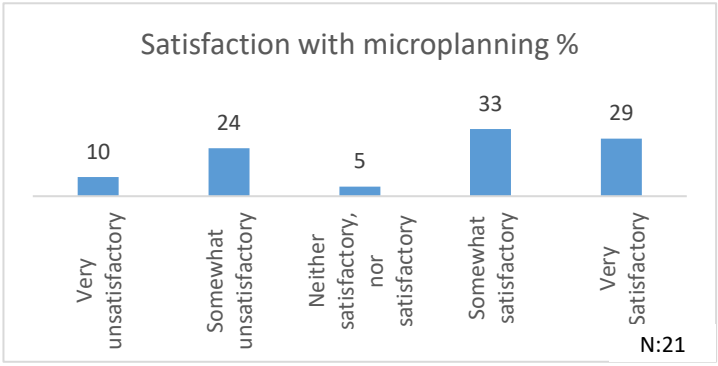


FIGURE 70: FEEDBACK OF BENEFICIARIES ON MICROPLANNING PROCESS

Satisfaction with VCRMC

In the project villages, 77% beneficiaries were satisfied with the work done by their respective VCRMCs, out of which 47% being very satisfied. However, there were also 14% beneficiaries who were dissatisfied with VCRMC's work. 2% were not aware of what the VCRMC was.

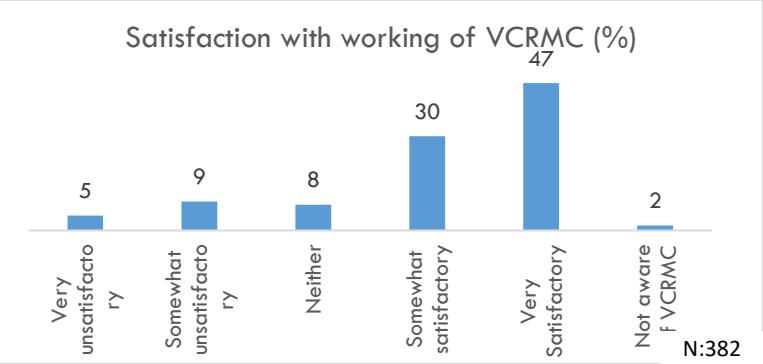


FIGURE 71: FEEDBACK OF BENEFICIARIES ON VCRMC

Satisfaction with the process of accessing project benefits

The satisfaction of PoCRA beneficiaries and beneficiaries from comparison arm about the process for accessing project benefits was also enquired. The satisfaction with this process is found to be higher in PoCRA villages as 78% beneficiaries reported to be satisfied or very satisfied as compared to 70% in comparison arm.

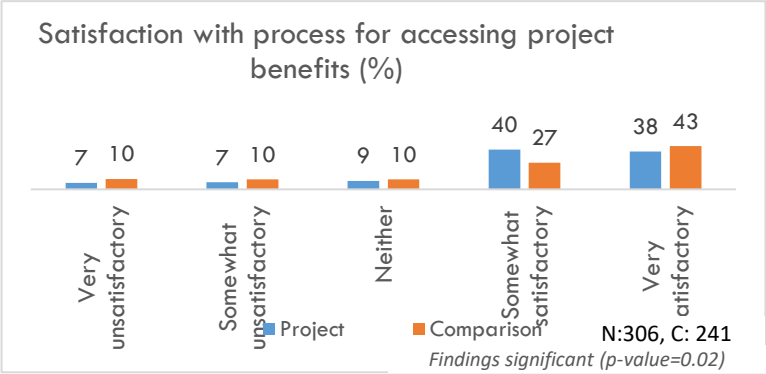


FIGURE 72:BENEFICIARY FEEDBACK ON SATISFACTION FROM PROCESS OF ACCESSING PROJECT BENEFITS

Satisfaction with support received from Project Staff

Beneficiaries were asked how satisfied they were with the support provided by the project staff in application process and availing benefits from the project. The project staff included agriculture assistants, cluster assistant, FSS facilitator, SDAO and project specialist. The satisfaction with the project staff was observed to be higher in project villages as 71 % of the respondent beneficiaries reported to be somewhat or very satisfied as compared to 63 % who reported so in the comparison arm.

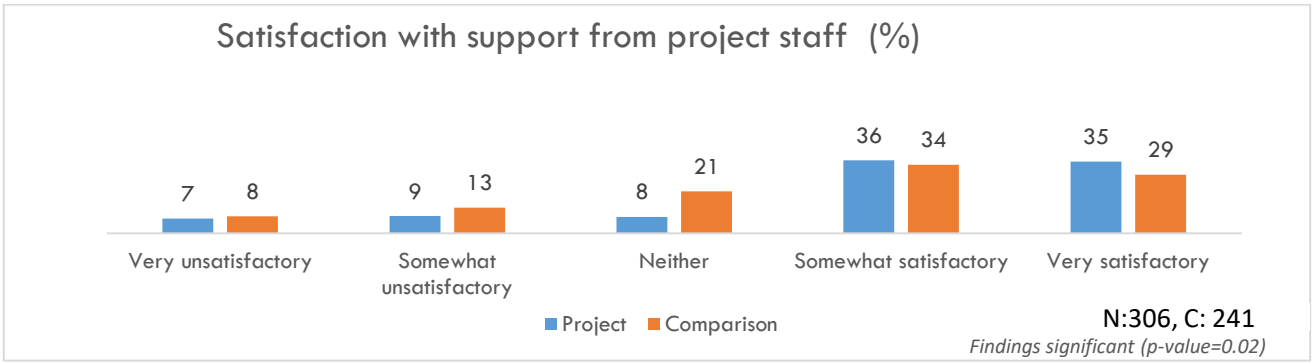


FIGURE 73: FEEDBACK OF BENEFICIARIES ON SUPPORT PROVIDED BY PROJECT STAFF

Additionally, participants of farmer field school from PoCRA were asked how satisfied they were with the knowledge of the FFS facilitator. 47% said they were very satisfied and 29% said they were somewhat satisfied. 17% said they were not satisfied with the work of the FFS facilitator.

PoCRA beneficiaries were also asked about their awareness or feedback about some important parameters related to PoCRA. Only 17% of the respondents from Phase 1 villages were aware about water budgeting which was conducted in their village. It was heartening to find that 47% of the project arm beneficiaries had visited PoCRA channel on YouTube or accessed PoCRA Facebook page. Also, 13% of the beneficiaries had participating in exposure visits conducted by PoCRA whereas 14% acknowledged that they had attended other trainings provided by POCRA.

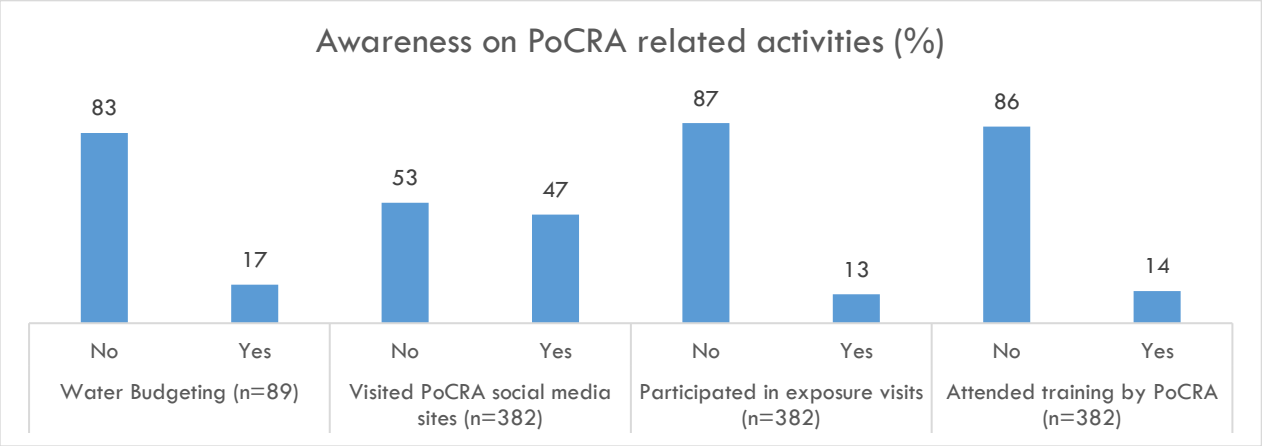


FIGURE 74:AWARENESS OF POCRA BENEFICIARIES ON VARIOUS PROJECT ACTIVITIES

The beneficiary beneficiaries across project and comparison arms were also enquired if they had benefitted from any other government scheme related to agriculture and agri-allied activities. Pradhan Mantri Fasal Bima Yojana was the scheme from which maximum beneficiaries had reported to benefit with 32% and 30% beneficiaries in project and comparison arm respectively. The below graph presents, the percent of beneficiaries who had reported of receiving benefits from other government schemes across both project and comparison arms.

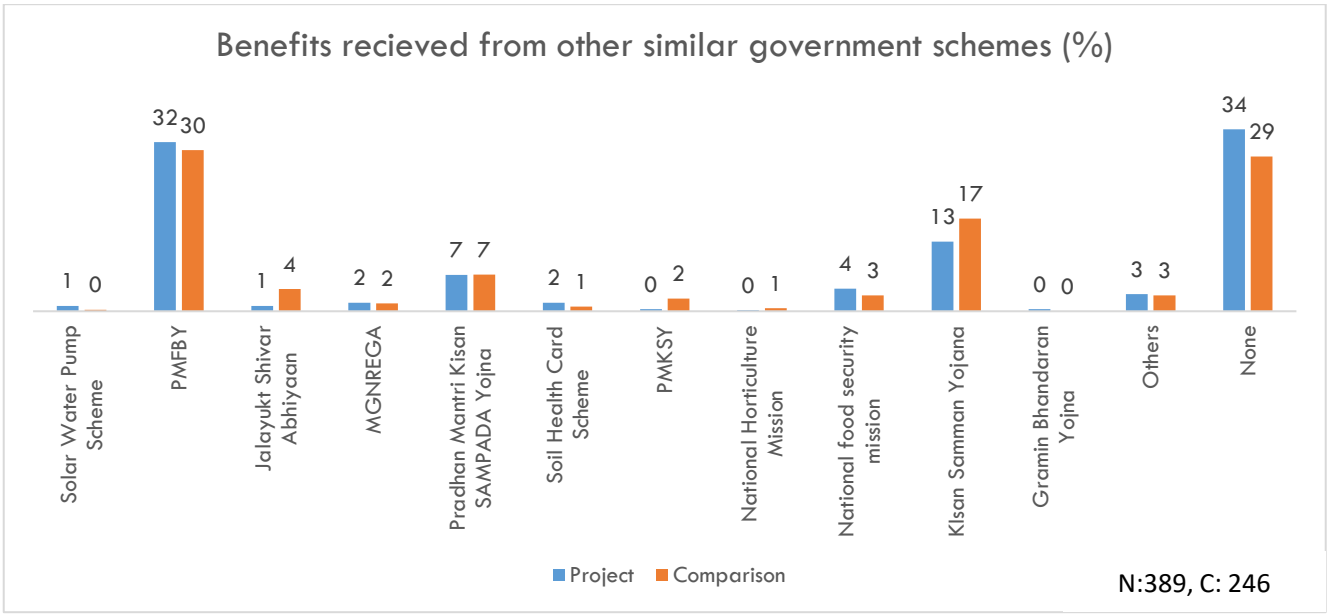


FIGURE 75:PERCENTAGE OF ACTIVE AGRICULTURE-RELATED GOVERNMENT SCHEMES IN PROJECT AND COMPARISON ARMS

6.9 PoCRA beneficiaries from an Inclusivity Lens

This section presents the analysis of PoCRA beneficiaries from an inclusivity lens and also when compared to similar non PoCRA beneficiaries.

Gender

It can be observed that the relatively higher percentage of females were able to get benefits in the project area (15%) as compared to the comparison area (11 %).

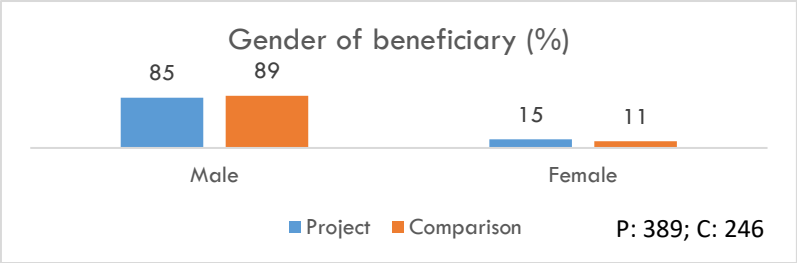


FIGURE 76: DISTRIBUTION OF BENEFICIARIES BY GENDER

Marital Status

On analysis of the marital status of the beneficiaries it has been observed that majority of the beneficiaries were married, with 90% of the beneficiaries married, 8.5% unmarried and 1.5% widows in the project area. In the comparison area, similar trend was seen with 97% as married, 2% unmarried and 1% widows.

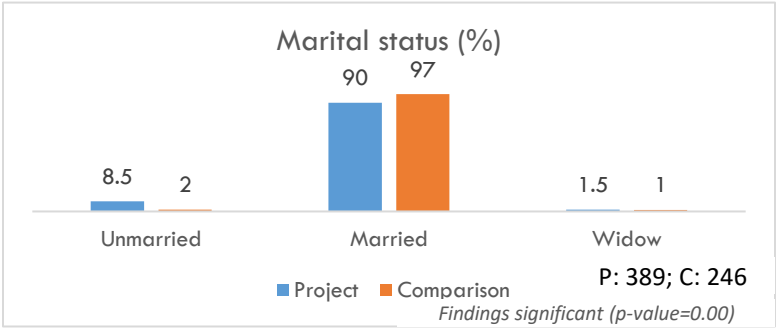


FIGURE 77: DISTRIBUTION OF BENEFICIARIES BY THEIR MARITAL STATUS

Family Characteristics

Another indicator covered under socio-economic profile of beneficiaries is the type and size of their families. 17.5% of families in project area and 18.6% families in comparison area were nuclear families. The average family members were found to be 5 in both project and comparison. In project area, minimum members in a family was reported as one while maximum was 15. Similarly, in comparison area the minimum members in a family was one and maximum was 17.

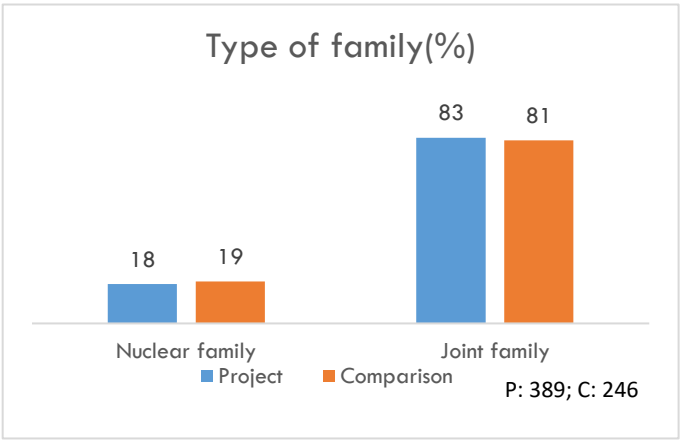


FIGURE 78: TYPE OF FAMILY OF BENEFICIARY

Education

The percent of beneficiaries who reported no education is similar across project and comparison areas at 12% and 13% respectively. However, when we see schooling and education beyond secondary schooling, we find that beneficiaries from project area had slightly better education status with senior secondary school at 19%, diploma at 3%, graduate at 13% and postgraduate at 4%. In contrast, the comparison area reported 14% at senior secondary school, 1% at diploma, 10% as graduate and 3% as post-graduate.

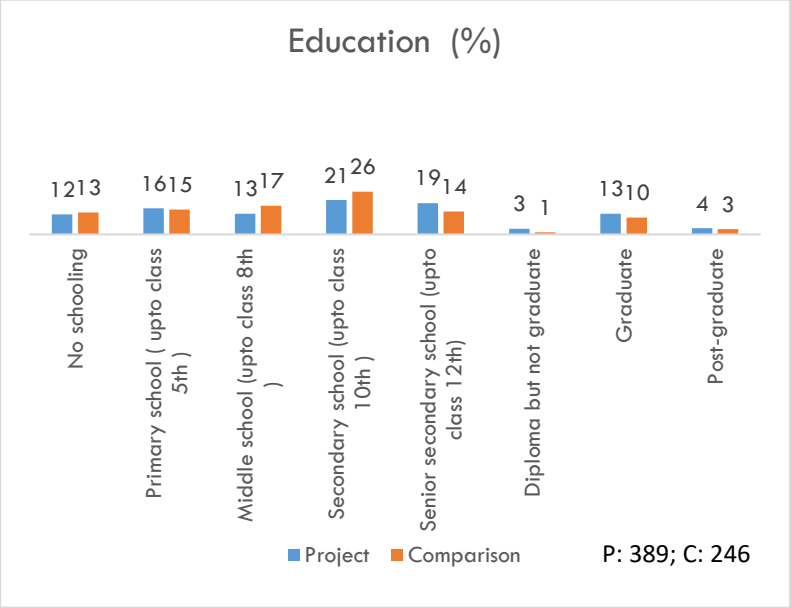


FIGURE 79: DISTRIBUTION OF LEVEL OF EDUCATION OF BENEFICIARIES

Religion

The religion profile of the beneficiaries showed majority were Hindus (Project: 97%, Comparison: 98%). In very few cases, the beneficiaries belonged to Muslim, Buddhist or Sikh religion, as shown in the figure.

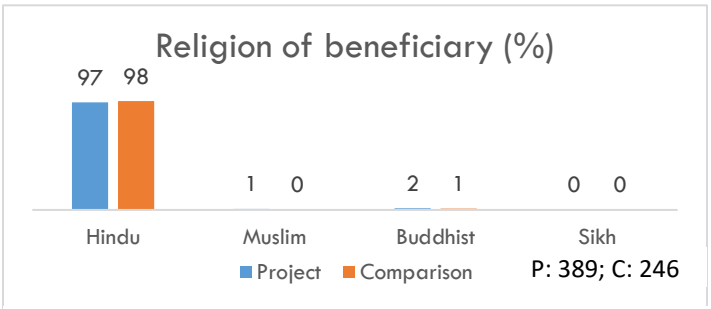


FIGURE 80: DISTRIBUTION OF BENEFICIARIES BY THEIR RELIGION

Social Category

The social category profile of the beneficiaries was similar across the study areas. We can see that the cases of Other Backward Class is higher in project than comparison area at 13% and 10% respectively. Apart from this, in general category in majority of the beneficiaries were Marathas (Project: 68%, Comparison: 71%), Scheduled caste (Project: 5%, Comparison: 5%), Scheduled tribes (Project: 4%, Comparison 3%) and Notified tribes (Project: 11%, Comparison 11%) showed almost same distribution.

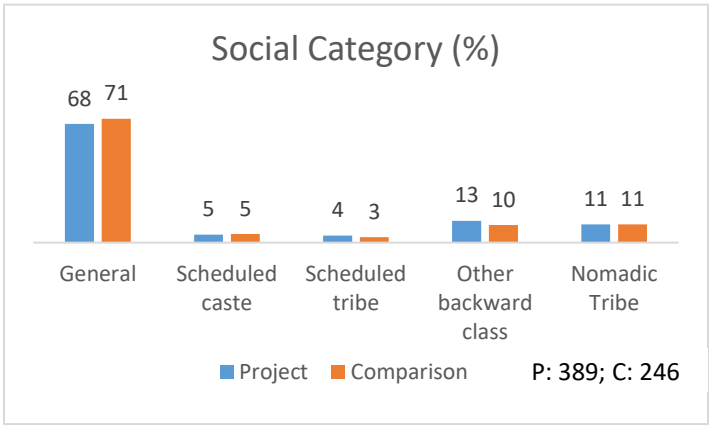


FIGURE 81: DISTRIBUTION OF BENEFICIARIES BY THEIR CASTE

Income

The main source of income was found to be agriculture with 83% beneficiaries from project and 88% from comparison reporting farming or agriculture as their source of income. Unskilled wage labour (project: 7%, comparison: 4%), micro-enterprises like kirana shops (project:5%, comparison 2% and livestock rearing (project 2%, comparison: 4%) were other sources of income reported. Very low cases were reported for skilled worker, salaried worker, contractual worker and other jobs like operating dal mill or driving tractor.

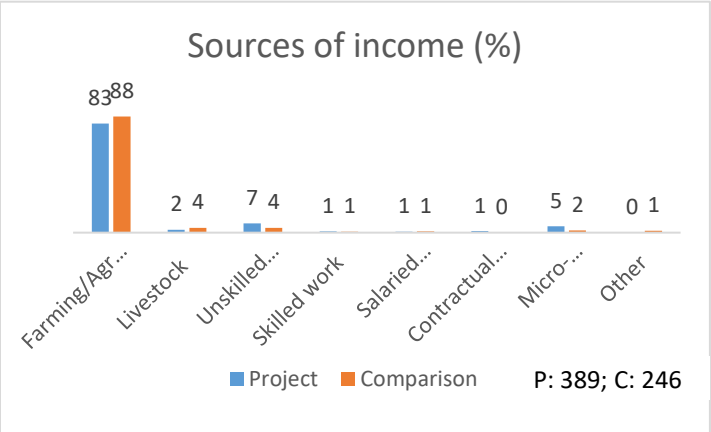


FIGURE 82: SOURCES OF INCOME OF BENEFICIARIES

The mean annual income was slightly higher for project area at INR 1,16,884 than comparison area at INR 1,01,305. The mean amount of annual income reported is given in detail in the table below.

TABLE 9: MEAN INCOME ACROSS STUDY ARMS

	Mean income (INR)	Std. Error	95% CI	
Project (n=389)	116884	151424	101808	131961
Comparison (n=246)	101305	101304	86731	115878

6.10 Findings on VCRMC Functioning

As part of the concurrent monitoring, focus group discussions were conducted with the members of the VCRMCs from the sampled project villages to get their feedback on project implementation and to comment on its formation and functioning.

As per the project guidelines, the VCRMC should comprise of 13 members, and the number of members required from different categories including gender, social categories, land holding is pre-defined. The composition was mostly as per the guidelines but in 4 cases, it was found that the progressive men and women farmers were not of the defined category. Reason given for variation in three VCRMCs with variation was mainly difficulty to get farmers to fill the category of 'Progressive farmer NT and SC/ST'. As a solution, farmers from other categories were filled in the VCRMC. The 27 surveyed VCRMC's overall had 346 members out of which 20 %(68 members) were SCs , 7%(23 members) were STs, 16 %(55 members) were NT/VJNT and 53%(184 members) were women members.

The frequency of meeting was mostly reported to be conducted every month, though a few also said that they held the meeting on need basis. In some cases, it was reported that an informal meeting between a few members VCRMC members to review the number of applications. Based on this, a formal meeting date is fixed and put up on the Gram Panchayat notice board. In some other cases, the meeting date was decided by the VCRMC members in a general Gram Panchayat meeting. In some cases, the meeting date was decided based on the number of applications received, say after 25 applications or more. In one case, it was reported that the AA and CA decide on the meeting date. The meeting information is conveyed

to members over a telephonic call, WhatsApp, personally or through Gram Sevak. In some cases where the appointment of Krushi tai or Krushi mitra has been done, they conveyed the message regarding the meeting. On enquiring and also by observing the meeting books, it was found that on average 9 members had attended the last VCRMC meeting. The main topics of discussion in the meeting were found to be review of current progress of project in their village, guidance to farmer and approval to application of the farmers, procurement of assets to farmers through purchase committee and issues like recruitment of Krushi Tai. The date of next meeting date was decided in the current meeting in some of the cases.

On enquiring about the trainings received by VCRMC members till date, it was observed that majority VCRMCs had received training but some VCRMCs reported of not receiving formal training. Training were reported to be conducted physically and also through video conferencing. The general topics of training were viz. information about the project and its components, roles and responsibilities of VCRMC members and other stakeholders, training on climate resilient agriculture practices including fertilizer spraying technique, IPM, use of drip and sprinkler etc. Further capacity building trainings that VCRMC members want to receive include refresher training on all project components, training to identify which type of benefit should be suggested to which respondent (e.g. who should be suggested to get support for pipes/dig wells/drip etc), training and agriculture technologies/benefits provided under PoCRA.

On enquiring about the documents available maintained by VCRMC, the key documents maintained by them were found to be meeting and proceeding book (available in most of the cases), visit register and cash book (mentioned in few cases) , cheque book (in few cases) and documents related to individual applications. During physical observations it was found that meeting agenda and resolution was not written in most of the cases. The main responsibility of maintaining the documents was found to be either with AA and/or CA in the village. *Many VCRMC members did not know about the nine types of registers to be maintained*. It was found that most of VCRMCs have not spent the financial amount given to them. Two VCRMCs have spent the amount for banners as well as furniture for the building where the meetings are conducted. One VCRMC reported that they will utilize the funds to procure a tablet for faster process of farmer applications. *The key bottlenecks in utilizing the funds were reported to be not having a cheque book and VCRMC bank account not opened*. The banks accounts were not opened yet in the villages Mangrul and Beed Sangvi of Ashti block of Beed district. In the village of Nagthana in Gangakhed block of Parbhani district, the committee was unable to perform the transaction due to lack of cheque book, which was yet to be receive from the banks.

The methods most frequently adopted to mobilise eligible beneficiaries were viz. creating awareness through loudspeakers and in gram sabha meetings, writing information on gram sabha notice board, informing potential beneficiaries in person, through WhatsApp groups and via providing guidance for availing benefits as well creating awareness. VCRMC members reported that they mostly motivate farmers who have received pre-sanction but are not implementing the activity by understanding if they are facing any problem and guiding them to procure material, helping farmer to procure material on credit from dealer and facilitating credit support where possible.

On verifying the status of availability of complaint box and complaint registers, out of the 27 VCRMC visited, complaint boxes were found installed in 14 villages and nine had complaint register. Most common actions reported by VCRMC to make their village climate resilient included tree plantations, avoid cutting of trees, block plantations, recharge of borewell, use of farm residue in compost, constructing soak pits and ban on grazing.

To summarize it is important to build capacity of VCRMCs so that they are aware of the different registers that should be maintained by the VCRMC and ensure they are following maintaining the same. Also, it needs to be ensured that all VCRMCs have functional bank accounts and cheque books with them so that they can utilize the funds assigned to them for effective implementation of the project.

FIGURE 84: VCRMC COMMITTEE MEETING OF VILLAGE AANJI, TALUKA KINWAT, DISTRICT NANDED

FIGURE 83:VCRMC MEETING WITH VILLAGE ZARI, TALUKA DEVNI, DISTRICT LATUR

6.11 Feedback on Functioning of Krushi Tai

Out of 27 sampled PoCRA villages, Krushi Tai was found to be recruited in 24 villages. From this sample, we found that one Krushi Tai had migrated as a sugarcane cutting labourer. Feedback of the remaining Krushi Tais were taken to get their feedback on various aspects.

On enquiring Krushi Tais about their key roles and responsibilities, the key tasks that the Krushi tai were aware of were found to be mobilizing women for SHG meetings, providing information about the project to farmers through home visits, motivating people to take up project benefits, and providing advice on efficient water use. It was found that three Krushi Tais were unaware of their roles and responsibilities. To mobilize women farmers, the Krushi Tais said they do home-visits, held meetings, informed through phone calls, and informed SHG members to spread the word.

When enquired about the project related trainings received by Krishi Tais , only five out of twenty three acknowledged attending training related to PoCRA. These trainings were on project activities, their role, use of drip and sprinkler irrigation, FPO support for processing and SHG support for entrepreneurship. Only ten Krushi tais said they had organised meetings or trainings till now. The meetings were mainly on accessing project benefits, information on drip irrigation and horticulture.

"*I have attended the live streaming for training but due to poor network problem I did not understood the training*"- Krushitai

It was observed that a few Krushi tais were not aware of their roles and responsibilities as they had not been oriented or trained yet. Even those who had been on-boarded, their awareness of the project remains low. Eleven Krushi tais reported to have mobile handset with them. Majority reported that their husband, father in law or brother help them in their work. One Krushi tai said her husband made the home visits in her place. Also, only Krushi Tai had reported of receiving her honorarium till now.

For further strengthening the role of Krushi tai in the project, it is suggested that proper orientation and training of Krushi tai early on would ensure so that they can carry out their work more efficiently. Also, incentivizing attendance in all trainings and meetings could improve attendance, and therefore capability of the Krushi tai. Better incentives are also needed to be given so that the Krushi tai does not leave her

role and goes in search of other jobs. Ensuring that each Krushi tai has a mobile handset would enable them to work more efficiently in holding meetings and relaying project-related information via calls and SMS. It is suggested that Krushi Tais should be trained on the DBT application process and they should be capacitated to support the farmers to apply through DBT portal. Further support of Krushi Tais can be very critical in ensuring better participation of women farmers in FFS sessions.

6.12 Awareness of Environmental Safeguards

Environmental safeguards have been integrated in PoCRA project and throughout its different components. All the project stakeholders were also enquired about their awareness on environmental safeguards.

The perception of environmental safeguards in these stakeholders is limited to preventing felling of trees during construction of assets like laying down pipes, farm ponds, and other community works. Some agriculture assistants reported that if trees were cut during asset construction, they were planted along with bunds, canals and check dam sites. An agriculture assistant also said that farmers in the villages under him were told of the importance of farm bunds to protect humus layer and soil erosion. Furthermore, the bunds would contain moisture during dry spells and reduce damage. Farmers are also encouraged to grow fruit trees on their lands.

With regard to complying with rules, mixed response was observed. Whereas one cluster assistant from Anandwadi informed that the rules for conservation were very strict followed in his village and awareness on environment conservation was generated through displaying information on Gram Panchayat notice boards, another cluster assistant from Beed Sanghvi informed that they are not aware of any environment specific guidelines in their area.

Suggestions to improve environmental safeguards were varied. One suggested ban on free grazing to cattle on community land. As banning cattle grazing is not viable, the villagers can be trained on managing commons so that pressure on the grazing sites is reduced and better management of the commons would reduce soil erosion. Other suggestions included replacing chemical pesticides with organic, introducing penalties for not following guidelines, and using farm waste for compost. The project specialists also said that they promoted organic farming, low chemical use and maintain pH of soil as effective environmental safeguards. However, no rule for compliance was in place that they were aware of. It was also mentioned that existing water harvesting structures should not be harmed during construction of new structures. Community works were seen as a means of ensuring ground water table. Some other specific environmental safeguards reported are also presented below-

"*Agroforestry must be replaced by dense plantation*"- SDAO

"*Solar pumps must be incorporated a part of project to reduce CO emission through diesel and electric pump*"- SDAO

6.13 Feedback on other key areas

Stakeholder feedback received on some of the other important areas related to PoCRA project have been presented below

Feedback on Agromet Advisory

The Agromet advisory provided by PoCRA was found informative to the stakeholders and it helped farmers in planning of spraying the pesticides as well as prepare for the potential pest attacks due to change in weather. The advisory which the stakeholders reported receiving through PoCRA which is further provided to the farmers include a) Weather related information e.g. temperature and rainfall forecast b) Information of pest attack and the pesticides to be used to control it c) Irrigation need of crop as per weather and crop management (INM). The FFS facilitators reported of receiving the Agromet advisory information on their FFS application. The advisory was shared with farmers through different means viz. FFS via facilitators, Krushi tai, krushi mitra, Gram Sabha, hoardings and notices in the GP and Krushi seva Kendra in village. It was reported that WhatsApp and SMS are also used to provide advisory messages.

"*Prior information related to bad weather, pest infestation and unseasonal rainfall helps farmers to take necessary precaution to save their produce*"- AA

Though some project staff also mentioned that the Agromet advisory provided may not be accurate and applicable till the village level. In one case the DSAO reported that similar information can be availed through CROPSAP, therefore there is no need of separate Agromet advisory from PoCRA

"*Rain gauge are at circle level. The climate advisory data is not accurate, and the advisory may not be applicable to particular village*"- PS Agriculture

Feedback on Capacity Building Training by PMU

Feedback from PoCRA field staff was taken regarding the capacity building trainings provided by PMU. All the cluster assistants have reported of attended training at some level through PoCRA. The subject of the trainings received were viz. PoCRA and its objectives, information about DBT application, benefits that are provided through PoCRA e.g. drip, pipes, sprinkler irrigation etc ; and agriculture resilient agriculture practices which are promoted through FFS including BBF, IPM etc and also about NRM activities promoted through the project. Though a smaller number of AAs reported of attending project related trainings. Only five agricultural assistants have reported to attend the training. As PoCRA project moves forward, the following trainings were suggested by stakeholders in order to make project implementation easy

a. Refresher trainings on DBT application
b. Training on Shade net and Polyhouse at NIPHT- Talegaon (For AA)
c. Goat farming, Sericulture and Apiculture (For AA, CA and farmers)
d. Training on soil and water conservation (Farmers and AA)

"Exposure visit must be arranged where there is problem in initiation of community works"- AA

Feedback was also taken on the training application developed as part of the project. Lack of awareness was found amongst most stakeholders regarding the use of training app. Many of the stakeholders who used it found the app good for use but complained about its non-functioning without internet connection as it was reported that the application does not work in offline mode. It was suggested that the app must work offline and needs requisite updation.

"*Training App do not work properly; we have to take training in elevated area where there is good network*"- *AA*

"*The training app is good for farmers who cannot attend the training when organised. All aspects of agriculture are covered in this app*"

6.14 Success Stories

Climate Resilience by protective irrigation through community Farm Pond

Three farming households with land belonging to Chandrakalabai Raosaheb Ghodake, Alkabai and Arjun Vilas Ghodake in Village Karanjgaon, Vaijapur taluka, Aurangabad district sought to take benefit from PoCRA. They have an aggregate of 15 acres of land and all three households have been practicing traditional rain-fed techniques to pursue their livelihood through agriculture.

Uncertain climate conditions as well as drought in the year of 2018 made farming more difficult. This adversely affected them, who only had agriculture as their main source of livelihood. The traditional crops cultivated by them were mainly cotton, soybean, chickpea, ginger and vegetable crops. The farmer trio experimented with Horticulture plantations back in 2016 but due to lack of source for critical irrigation after the month of January, they face frequent mortality, despite the fact that drip irrigation has been installed in the orchard.

As these households got aware of the micro planning process and its benefits under PoCRA, they got interested in setting up a Community Farm Pond in their agriculture land. This could be instrumental in addressing their need for critical irrigation.

The second son of Alkabai helped them to apply for community farm pond activity under PoCRA. The application was submitted for a community farm pond of the size 34x34x4.7 meters After getting pre sanction from the officials the work was started with the help of Poclain excavator machine. It took 3 days to excavate the soil. The three households decided and increased the depth of the farm pond when it was under construction. The polythene for lining was purchased from the dealer in Kopargaon city of Ahmednagar district. Payments to the Poclain (excavation) machine owner and partial credit to the polythene bought for the pond was given by the family itself.

The farm pond was ready to use in the month of December 2019. Eventually, farmers started filling the water in the farm pond through their well. The total cost of farm pond was reported to be 345000. This included cost of excavation at approx. INR 145000, cost of polythene at INR 2,00,000 and cost of diesel and other sundry expenses. The money was arranged by the farmers from the profits incurred from selling the cotton produce. The total subsidy as per the PoCRA guideline is expected to be INR 3,25,000 which is yet to be credited into their accounts.

The farm pond has got promising results for these households. After construction of the farm pond, one of the household has been able to irrigate their pomegranate orchard in 1.25 acres of land through drip irrigation. In addition to assured irrigation for the pomegranate cultivation, 3.75 acres of additional land has been brought under irrigation. Potato is is now cultivating potatoes in 2 acres and onions in one acre of land during rabi season. Ginger harvesting in 0.75 acres of land was also postponed and thus brought higher production as they were able to provide additional irrigation to the crop. Overall, the community pond has not just built resilience to climate change but also enhanced livelihood security and potential income of these three farming households.

"*For us, water availability for farming has now improved by having a farm pond for irrigation. Our area under cultivation has increased and we are confident that there would eb a substantial increased in our income this year*"

FIGURE 85: BENEFICIARY (ARJUN VILAS GHODAKE ,VILLAGE KARANJGAON, VAIJAPUR TALUKA, AURANGABAD) WITH HIS COMMUNITY FARM POND

Livelihood Opportunities Through Goat Rearing

Srimati Parigabai Changdev Dangade, is a widow farmer from Karanjgaon village, Vaijapur taluka, Aurangabad. Her family has a daughter and a son. They have four acres of land which completely rain dependent. Parigabai is only able to take crops in the kharif season, since there is absolute shortage of water in the rabi season. The three major crops are corn, cotton and bajra. She also tried mushroom in the last season in 2019. The average income from farming is in the range of INR 20,000 – INR 30,000. The total cost incurred is in the range of INR 15,000 – INR 18,000, leaving a marginal average income of almost INR 10,000 from the season. The income suffers further at the hands of uncertain rainfall and climate change factors.

Therefore, Parigabai looked for additional income sources and started exploring goat rearing practice along with primary agriculture. In 2017, she bought 10 goats of a local variety. In the three years since, she has made an income of INR 1 lakhs, by selling approximately 20 goats at the rate of INR 5000 per goat. Further to the direct income by selling goats, 10 goats, according to Shobha Gangurde, her daughter, also provides them with enough manure for 2 acres of land for a year.

Coming to know about the benefits under PoCRA, Parigabai applied for purchasing more goats, by applying under the widow category. As it got confirmed, Parigabai purchased 10 goats and 1 Buck of the Osmanabad Variety in 2019 under the project. The goats were purchased from the Manur village in Kannad Block of Aurangabad. It costed INR 9500 per goat to Parigabai (INR 8000 on purchase and INR 1500 on insurance) Thus cumulatively, Parigabai spent a sum of INR 95000.

Parigabai now has 22 goats in total and she is positive that her business of goat rearing is going to expand given her profits from 10 goats she had earlier and an additional 10 now, being provided by PoCRA.

"*Support received from POCRA will help to increase my family income and also expand my livelihood opportunities*"

To manage the fodder requirements for the goats, in addition to the farm residue from maize, pigeon pea and chickpea crop, Parigabai has set up a hydroponics unit at her own expense that supplies green fodder. The financial support was provided by her relatives. The total cost of installation of this hydroponics unit was around INR 2 lakhs rupees. The future plans of Parigabai are to purchase the exotic varieties of Bor and Shiroli for production of high-quality goats. Parigabai also wish to supply the bucks for service in village for healthy and good quality breeds.

FIGURE 86 :BENEFICIARY (PARIGABAI CHANGDEV DANGADE, KARANJGAON VILLAGE, VAIJAPUR TALUKA, AURANGABAD) WITH GOATS PURCHASED THROUGH POCRA SUPPORT

6.15 Field Visit Observation by Experts

Field Visit Report - Agribusiness Expert

The Date of visit was done by the agri expert on 31st January and 1st February. Village Dhanaura and Wakodi, Kalamnuri, Hingoli and Village Devala and Turk Pimpri, Aundha, Hingoli were visited to understand the agriculture related situation and project implementation status from the expert's point of view. The specific objectives of the visit were to identify key challenges in agriculture and suggest solutions, observe NRM assets created in the village , to suggest way forward to improve PoCRA, provide feedback on PoCRA activities and its impact on target beneficiaries and provide feedback on a few FPOs in the project area (operational, economic and social parameters)

The key observations for the visit and the challenges faced by farmers have been presented below.

At production level following key challenges were observed-

1. Input availability: Availability of quality input in sufficient quantity at reasonable price is a challenge. Farmers are mostly dependent of local dealers and distributors for input supply. Government supplies are delayed and not in sufficient quantity.
   Recommendation – It is recommended that support should be provided to strengthen government input supply system to ensure quality inputs availability at reasonable price. Project promoted FPOs may take up input supply business as one of their revenue streams. It is heartening that interventions to address this are already planned under POCRA project.
2. Extension services – Farmers reported of having limited access or information about extension services. Krishi Tai available in the village were also observed to be not very knowledgeable at this juncture of the project to serve as independent extension worker. A system of recruitment, on boarding, capacity building, appraisal, reward and recognition of Krishi Tai is in place.
   Recommendation - Focus should be to build capacity of Krushi Tai's to be trained as community resource person and be available as ready knowledge resource for the community. To deliver high quality services these extension workers need to be trained and remunerated suitably to keep them motivated. A system of recruitment, on boarding, capacity building, appraisal, reward and recognition of Krishi Tai should be in place.
3. Lack of power supply - The community in the field visit area reported lack of power supply that leads to interrupted agriculture operations like irrigation and threshing etc.
   Recommendation – Installation of solar panels should be promoted through project support as it could help farmers to increase their power availability.
4. Crop loss due to wild animals – Another challenge reported by the farmers was that wild and stray animals destroy crop significantly in the area of field visit.
   Recommendation – Government/project should float farm fencing scheme for the affected farmers. Scheme may be designed around creating mechanical barriers using barbed wire or solar electric fencing or developing physical barriers like planting trees or shrubs on farm boundaries.
5. Availability of irrigation water – Availability of irrigation water was reported to be the biggest challenge of farmers. Many farmers had constructed farm ponds under *Magel Tyala Shettale* scheme but these ponds do not have polythene lining to protect water loss. These ponds per village were very few in number and have capacity to supply water only to 2-3 farmers per pond.
   Recommendation – It is encouraging that this is one of the key focus areas of PoCRA and the required steps are being taken to address this major challenge. The project should also consider if it is worthwhile to provide matching grant support to purchase lining for farm ponds constructed in other projects.

The post- production challenges which were identified have been mentioned below:

1. Managing post-harvest losses– Barring turmeric where processing facilities were mostly available in the village, the other crops especially perishables were reported to suffer significant post-harvest losses due to unavailability of appropriate packaging material or storage facility in villages. Post-harvest loss in onion was reported to be in the tune of 30-35%.
   Recommendation – As already planned in the project, community storage facilities should be promoted which would help the farmers to take advantage of market fluctuations. Thrust should be given to increase the implementation pace of the post-harvest strengthening interventions. Based on the

feedback from farmers it is also suggested to provide matching grant for constructing individual level storage facilities.

2. High transportation cost – Transportation cost turns out to be very high for farmers who have less marketable surplus.
   Recommendation – PoCRA and agriculture department can provide produce aggregation support so that the aggregated produce to be transported to reduce transportation cost and achieve efficiency at scale.

The other key challenges related to agriculture which were observed have also been listed below:

1. Credit availability – Farmers face a lot of problem especially in completing paper formalities to avail loan from banks.
2. Crop insurance – Farmers face lot of problem in claiming crop insurance and availing benefits.
   Recommendation – Facilitation support should be provided by agri extension workers so that they can easily avail benefits of insurance. Farmers during FFS sessions should be informed about the procedure to apply to agriculture credit and also how to avail crop insurance benefit in case of crop loss.
3. Soil health management – Organic matter in the soil is declining leading to deterioration in soil health.
   Recommendation - Livestock production needs to be promoted to have enough organic matter available at farm for composting. PoCRA should promote construction of bigger farm manure units as at present only small units (10x3x2.5) are being promoted and subsidized.

The NRM assets created under PoCRA and other government schemes in these villages were also observed. The application of community assets are under processing in these villages. Also, the assets created under other schemes need renovation. Farm Ponds (25x20x3 meter) created under MKS scheme do not have polythene lining and the farmers reported that the stored water percolates down and pond dries before February. Wells also need maintenance as their inner casing is eroding slowing. New wells are well maintained and being used for irrigation using motors provided under PoCRA.

It was also observed that PoCRA has created awareness about Climate Resilient Agriculture in the community. Community is these villages was aware of climate change and said that they would take actions to adapt this change.

Farmer Producer Organizations (FPOs)

Name of FPOs visited:

1. Pradnyasheel Taruna Farmer Producer Company Limited, Village Dhanaura and Wakodi, Kalamnuri, Hingoli
2. Nagnath Farmers Organic Producer Company Limited, Village Devala and Turk Pimpri, Aundha, Hingoli

Both the FPOs are legally compliant and have very well identified and branded their product. Pradnyasheel is dealing with Soybean, Tur Dal and Nagnath FPO is a seed production and Turmeric power producing and selling company. Both the companies have functional board and active membership base.

The key challenges that these FPOs were observed to be facing the plausible solutions for the same have been presented below

1. Lack of capacity of Board members: The board and Director/CEO lacks capacity on business development. Both the companies were started because of support provided though different government schemes. Board and Director/CEO were not very clear on their five-year plan.

Recommendation: The SIYB (Start and Improve Your Business) training for Board and top management team is recommended. The SIYB program (conceptualized and implemented by ILO) is structured into four separate training packages, which are designed to respond to the progressive stages of business development. These four training packages have been mentioned below

- Generate Your Business Idea (GYB) is intended for people who would like to start a business, and who, through the training, develop a concrete business idea ready for implementation.
- Start Your Business (SYB) is for potential entrepreneurs who want to start a small business and already have a concrete business idea. The program is a combination of training, field work and after-training support, and helps participants assess their readiness to start a business and to prepare a business plan and evaluate its viability.
- Improve Your Business (IYB) introduces already practicing entrepreneurs to good principles of business management. Its six modules (marketing, costing, buying and stock control, record keeping, planning for your business, and people and productivity) can be taught individually or all combined in a full course.
- Expand Your Business (EYB) enables growth-oriented small enterprises to develop a business growth strategy through training interventions.

The SYB and IYB packages also include the SIYB Business Game, a practical simulation tool to help participants understand the realities of starting and running a business. The EYB Business Game simulates an expanding business during training to help participants experience the impact of strategic decisions on their business operations.

2. Business plan: Both the FPOs did not have detailed business plan which is very much required for business planning and growth of the company over the years. The management of these FPOs currently do not have the understanding and capacity to develop business plan.

Recommendation – The project supported FPOs or applicants should be provided technical support to develop their business plan. They can be supported through PoCRA staff district staff and by engaging services from expert organizations that do business planning for small businesses and FPOs.

3. Market linkages – On interacting with these FPOs, both of them reported market linkage as their biggest challenge. They reported of facing challenge both wholesale and retail market. In wholesale market they find difficulty to compete with their competitors on pricing whereas in retail market, developing a brand image is a major challenge.

Recommendation – FPOs dealing with same produce should aggregate their product and market it as one brand. E.g., they can be allowed to market their produce under a brand formulated by PoCRA (though several technical and legal aspects need to be studies for assessing the feasibility of the same). This will allow them to compete with competitors in a better way.

4. Taxation - Pradnyasheel Taruna Farmer Producer Company Limited is facing problem dealing with GST. Legal advisors charge huge fee for complying GST and there are fine for non-compliance.

Recommendation - Board members of the FPOs should be trained on financial management including tax compliances so they may file taxes themselves and their dependency on legal advisor is comparatively less.

5. Migration of members - Members migrate to cities for better employment and women at home bear double burden of work.

Recommendation- FPOs should be managed efficiently to make an attractive return so that migration of members to the cities is restricted.

6. Working capital - FPOs lack working capital required to run their operations smoothly.

Recommendation - Capacity of FPO management should be built in a way that they make bankable proposal and get loans from bank or other financial institution. Support from PS agribusiness and specialized agencies should be provided to develop these bankable proposals.

7. Seasonal work – As the major activity taken up by FPOs in aggregation and selling, seed processing etc., the FPOs are not working entire year and their maximum occupancy is for 6-8 months.

Recommendation - FPOs should include some businesses like input supply that can generate revenue for them in lean phase. For this based on strong business planning its required that they have the working capital and technical know-how to carry forward this activity.

8. Interrupted electricity supply: It was reported by the FPO members that the irregular supply of electricity in their area is a major challenge for running their processing units. Interrupted electricity supply keeps processing units idle for more than 12 hours a day.

Recommendation – Using solar power supply support can be explored. Facilitation support should be provided to FPOs to get benefits of installation of solar from other government schemes e.g. from MNRE department.

Field visit report- GHG Expert

As part of the field observation visit, I had visited Beed Sangavi (18o53'10"N, 75o12'53"E), Jarud (18o57'15" N, 75o51'06"E) and Mangrul (18o47'22"N, 75o07'58"E) in Beed District. I interacted with the villagers, the respective Agriculture Assistant, Cluster Assistant, Sarpanch and members of the VCRMC. PoCRA activities had started in these villages around January 2019, with activities in Jarud starting much later than the other two.

Feedback on Agricultural practices:

Beed Sangavi Village: PoCRA activities started in this village in early January 2019. The village is remotely located. There are no local markets for the fruits, nearby market is either Pune or Solapur. Farmers present in the meeting unanimously asked for a storage system for onion and fruits. There are 300 wells in the village and the village is in the topmost point of the watershed and so, most of the wells remain dry. Villagers suggested to increase the manpower capacity of the VCRMC committee. Many of the farmers were aware of soil health cards. There is a milk cooperative in the village which sees a collection of 1000 litres of milk per day. All village households have LPG connection and electricity connection.

Onion is the major crop of this village. The price of onion varies from INR10/Kg to INR 150/Kg. However, the villagers do not have storage facility for onion and they are forced to sell the entire production even if the price is low. To gauge the potential of income from onion, during interaction with one progressive onion farmer in the village it was found that the farmer earns INR 30 Lakhs from his 5 acres land annually. He also mentioned that onion farmers get good return in in a cycle of 3-4 years. 200 kg urea/ acre is applied along with 100 kg/acre of NPK (N23%; K23% and P0%). A practice of using high amount of pesticide in onion crop was noted. Additionally, 1200 kg/ha of compost is applied to the crop land.

1000 acre of forest land is present in the village along with 2000 acres land under cultivation. 100 ha degraded/ barren land area is also present in this village. However, plantation cost is very high over these lands, so villagers do not prefer to cultivate these lands. There are about 27 ha horticulture land is present in the village with the cultivation of fruits like Mango, Pomegranate and Chikoo. Apart from Onion, they also grow Tur, Mung, Urad in Kharif and Jowar, Wheat in Rabi season. During Kharif season some farmers also plant cotton crop. Wild boar from nearby areas were considered a menace for cotton cultivators. Villagers have additional cost of cultivation, as they need to protect the crop from wild boar. There is no crop residue burning in the village. Most of the crop residues are used as fodder to 2000+ cattle in the village.

Jarud Village: This is not a milk producing village; cattle in the village are used for individual purpose only. There are about 100 landless households in the village. There are about 500 households in the village. 85% households use LPG for cooking. Most of the people are involve in farming in the village and working as farm labour in different areas. This village is also in the uphill area. Villagers advised to have check dams rather than farm ponds, however construction of check dams has not been initiated in their village under PoCRA scheme. Most of the farmers in this village uses bullock cart for farm activities. There are seven tractors in the village and there is no diesel pump set in the village.

Cotton and soybean are major crops of this village. There are several orchards in the village, these produces Custard Apple, Mosambi, Mango, Lemon etc. There is no fertilizer application for the horticulture crop in this village, only 8 – 10 tractors full of compost applied per hector. 50 Kg of Urea/acre is applied to cotton and soybean crops. Production of cotton and soybean are 2 – 3 quintal/acre and 3 – 4 quintal/acre respectively. The selling price of cotton is INR 4900/ quintal and that of soybean is INR 3500/quintal in the local market at Beed (about 15 Km from the village). Villagers generally burn the cotton residues and use the soybean residue for the preparation of compost.

Mangrul & Khanapur Village: These two villages together are considered under the PoCRA project. Total area of Mangrul & Khanapur village is 186 ha. There are 334 household in Mangrul and 124 Households in the Khanapur area. Both villages were also under the Marathwada Mission. There are about 50 – 60 landless households. Jowar, Bajra, Urad, Mung, Cotton and Wheat are the crops grown in this village. Jowar and Bajra are major crops of these two villages where the production of Jowar and Bajra is 10 quintal/ha and that of wheat is 7 quintal/ha. There are canals and wells in the village for minor irrigation only, in other instances the crops in the village are completely rainfed. 100 kg/ha of Urea is applied along with 100 kg/ha DAP. Cotton residues are burnt in the village, while other crop residue is used for composting. There are 70 ha of degraded land in the area and these lands cannot be renovated. Around 11 ha of orchard is located in the area. These orchards are producing custard apple, lemon and pomegranate. The major vegetables of this area are Okra, Brinjal and Capsicum. All produce is sold in the local market at Ashti.

In Mangrul and Khanapur villages, 72 people have got registered under the DBT portal and we see a total of 173 applications under various schemes of PoCRA.

Feedback on PoCRA activities

In Beed Sangavi, 349 applications are submitted in the DBT portal under different schemes of PoCRA from this village from 106 registered farmers. 61 applications got sanctioned. However, only three farmers have received the benefit from PoCRA i.e. for motor pump and pipeline. In Jarud, none of the landless have applied for goat or backyard poultry under the PoCRA scheme as they do not have the initial investment. In Jarud, 91 people have registered under PoCRA. There are 239 applications under various schemes of PoCRA. However, about 7-8 applications have processed so far, mostly for electrical

pump set and pipeline. There are applications for three farm ponds however none of them have been processed yet.

There are additional costs for developing the farm pond in this area as it requires fencing and sometime blasting. PoCRA sanction amount does not cover the same. Some of the farmers, particularly in the Beed Sangavi village have got the sanction from PoCRA for horticulture crop, but they could not plant the crop in time due to less/no rainfall in the area. According to PoCRA sanction, beneficiary has to complete the activity within two months. Due to non-availability of rainfall farmers are not able to take the activities in time.

Although the PoCRA project has started in these villages a year back, the villagers feel that have not been able to get substantial benefits under PoCRA. The remote location of the villages poses issues of accessibility for them. The cluster assistant said that he faces problem related to internet connectivity while registering the villagers to the DBT portal. So, the complete registration of beneficiaries is still pending in some cases in these villages. Villagers and cluster assistant reported problems with the PoCRA DBT portal. They are not getting the entire list of applications under various heads from the portal. Issues were reported related to biometric verification of the beneficiaries. The cluster assistants in at least two villages had reported that they are not able to complete the fingerprint verification farmers' mainly due to three reasons: i) Problem in the finger print verification machine, ii) problem with intermittent internet connectivity and iii) non-availability of clear biometrics of the beneficiary. In all three villages farmers' have reported that although they have got the sanctions for their requisition, they are not getting the financial support from PoCRA in time even after submitting the required bills after completion of work. This has impacted other farmers' too, some of the farmers' who has got the sanction are not ready to invest in purchasing the material as others are not getting the money in time.

Suggestions

In all villages, farmers try arranging their initial fund through bank loan (if they do not have savings), which is also one of the constraints for farmers as mostly banks are not ready to provide the farmer's loan. They have also suggested that before providing sanction for the horticulture crop PoCRA should keep in mind that the crop can be planted only after getting the monsoon rain (around June). Under the PoCRA scheme, the farm pond should be sanctioned in the horticulture land. However, due to this clause, the farm pond is not getting sanctioned in most of the surveyed villages.

Farmers' had complained that the cluster assistants are not regularly coming to their village. The cluster assistant in some villages had reported that they need to travel long distance in these areas and most of their salary is utilized in the purchase of fuel for their own 2-wheelers to visit the villages due to which they are not able to visit very frequently . It is suggested that the travel allowance should be looked at a case to case basis and higher travel allowances should be there for project staff going to distant villages. In some of the villages, some community farm pond has got sanctioned, but the work has not yet started. Farmers in these villages had suggested to revise the process of sanction for the farm wells. As their village is in hilly area, the land has steep slope and if a farmer in the downhill region has got sanction for a farm well then, the other farmer within approximately 500 metres uphill will not get sanction for a farm well. Farm well is a requirement for all farmers in the area, but they are not getting the required sanction from PoCRA.

It was observed that farmers' were not aware of GHG benefit they may get from the farm practices. Farmers' need to be trained in lieu of GHG benefits that can be achieved through climate resilient farm practices in the FFS. PMU also need to take initiative for providing GHG emission reduction benefits too farmers.

Field visit report - Agri-economist

During the last week of January 2020, Limbgaon and Konda villages in Nanded district of Marathwara region were visited to gain insights about the current implementation of PoCRA at village level. The village Limbgaon has been recently included under PoCRA and Kondha village was taken up in first phase.

Agricultural Practices: The total geographical area of Limbgaon village is 1038 hectares. About 94 percent of the area was under crop cultivation. The total geographical area of Kondha village is 819 hectares, out of which 96 percent was under crop cultivation. In Limbgaon village, the farmers were allocating a major share of total cropped area i.e. 57 percent to soybean crop followed by about one-fourth area to cereal crops. The pulses were grown on about 14 percent of cropped area whenever the crops like Jawar and maize were grown on very limited proportion. In Kondha village, Soybean crop also constituted the major proportion i.e. more than one-third i.e. 36 percent of the total cropped area followed by wheat and pulses. The other crops like sugarcane and Fruit trees are grown on about 7 and 8 percent of the cropped area. The share of cash crop as turmeric was grown on 5 and 8 percent respectively. Since recent decades, there was a sharp decrease in fruit tree crop due to draught conditions in the state. The other cash crop such as sugarcane was also grown on about 7 percent of total cropped area in Kondha village. This was assessed based on village records and based on interaction with GP members.

Distribution of landholdings: It was tried to understand the landholding in the villages visited. As per the previous guidelines of PoCRA, the landless, marginal and small farmers are the beneficiaries of the project, though now farmers above five acres of land are also eligible for benefits under PoCRA. In Limbgaon village, with the slight difference about half of the farmers were belong to the marginal size of farmers while one-third of the total holdings were belonged to small size of farmers. The proportionate distribution of the marginal and small farmers was almost similar with slight difference in Kondha village as in case of Limbgaon village. In Kondha village, there was a negligible proportion i.e. less than one percent belong to the landless category (Table 2). During the interaction with village communities, people reported that there were number of farmers those falling in the category of farmers. Because of the joint and inheritance ownership of land holdings among the family members on the one hand and long interval of shift land ownership on the other failed to identify the landless households. Thus, the farmers those have negligible size of holdings are neglected in getting the benefits from the project interventions.

TABLE 10:TENTATIVE FARM SIZE WISE DISTRIBUTION OF LAND HOLDINGS

Landless	0	0.05
Marginal	49.40	52.00
Small	32.70	35.00
Semi-medium	12.20	10.22
Medium	5.70	2.67
Large	0.00	0.00
Overall (Numbers)	597	786

Source: Village Records

Productivity of Major Crops: To access the future opportunities for intervention, an attempt has been made to understand the gaps in productivity of major crops grown by the farmers in project villages. It was understood that productivity per hectares in case of millets and pulses is slightly higher as compared to state level estimates. But in case of gram and wheat, it was understood to be lower than state level productivity and can be improved.

Livestock Economy: In certain areas, livestock economy plays an important role in sustaining livelihood of the households. It provides not only animal products but also provides draught power for farm production. Especially, marginal and small size of farms rear animal in crop production system[6]. The cost of rearing animals is also growing considerably. Climate variability/ change is also affecting adversely the fodder supply to the livestock economy. The agro-forestry and CPRs are depleting at the faster rate on which animals were dependent for fodder requirement. The community has also raised issue to address to deal with growing demand for fodder under project intervention. People reported that fodder-oriented varieties should be introduced that can help in resolving fodder problem.

Status of Water Resources: Groundwater is the major source of irrigation. The farmers have installed irrigations structures as open wells and borewells. In both the villages, faster depletion of aquifer has resulted in failure of wells in larger proportion. The reliability of water sources was reported to be 5 to 8 hours only. The farmers also realised the issues relating to power scarcity for irrigation purpose. Kondha village is located in the tail end of irrigation project. Because of its location, access to irrigation water also affected adversely. The water table has been falling down considerably i.e. ranging from 300 feet to 400 feet. The failure of power supply is another serious problem and farmers are looking for other sustainable alternatives like solar energy supply.

Marketing of Farm Produce: An efficient marketing system also determines profitability of farm produce and decision-making process of the farmers regarding cropping pattern as per the available resource scenario.
It is found that there the formal agriculture marketing facilities were missing near by the villages. The formal marketing facilities were available at the distance of 10 km. to 25 Km. from respective villages. The transportation cost per quintal ranges from Rs. 25 to Rs.40. In the absence of formal marketing facilities, there is a dominance of local traders and middlemen. They collect the produce from the producers at low price against the MSP. In such situation resource poor farmers are exploited by them.

To understand the market margin received by the farmers, only selected crops were considered for in-depth verifications. The fact shows that market institutions were inefficient that failed to yield expected benefits to the farmers. The farmers were not satisfied with the auction price offered. But it was their compulsion to accept lower offered price of their marketable produce. The farmers sold their produce within field at lower than minimum support price. They also face the challenges in prevailing marketing system especially in the implementation of MSP and price received by them. The farmers reported that due to lack of information regarding market functioning, they were compelled to sale out the produce. There exist considerable gaps between MSP and received by the farmers Table 4. Similarly, these gaps were also varying across the marketed farm produce. It can be because of the market imperfection. The farming community also revealed that inefficient marketing system cause to make the farm sector non-viable. In case of vegetable production, where no MSP system exists, the situation is more noticeable. It is

[6] There growing demand of bullocks for crop cultivation. The price of a pair bullock was ranging from Rs. 80 thousand to 1.20. Because, there is a demand for crop cultivation. While these animals are treated as roaming animals.

also a matter of distress among the farmers[7]. The farming community realises that there is provision of MSP in case of limited number crops. The crops which can be useful for them such as cash crops including fruits, vegetables and spices do not have any provisions of MSP. Only market forces play their roles in price determination. Such market operations make the farmer's economy non-viable and cause to distress[8]. This is a national issue relating to agricultural marketing, but we should initiate locally to resolve the issues nationally.

TABLE 11: GAPS BETWEEN MSP AND PRICE RECEIVED FOR MARKETED PRODUCE

Crop	Minimum Support Price (MSP)	Price Received	Gaps
Soybean	3710	2500	1210
Gram	4700	3500	1200
Jowar	1200	900	300

Source: FGDs with the farmers

Project Activities Implemented: Under the provisions of PoCRA, certain activities were planned that can be provided to the target groups. In these two villages, about eight types of activities were implemented (Table 5). In first phase village, numbers of activities were considerably higher as compared to that of new village. In second phase villages, these were 16 beneficiaries those were involved plantation of citrus fruit trees on 20 hectares[9]. It was also noticed that some activities relating to rehabilitation were also undertaken. In recent years, the micro irrigation facilities were promoted that given desirable signals of enhancing the irrigation facilities. It was found that average cost per hectare for the promotion of micro-irrigation was Rs. 30 thousand and 10 thousand for Sprinkler and drip irrigation respectively. Besides, about 11 farmers were also associated with foundation seed production. The response to foundation seed production was encouraging[10]. Certainly, such initiative, not only resolve the issues relating seed input locally but it will helpful in meeting the growing demand for seed input in the regions.

TABLE 12:DETAIL OF ACTIVITIES IMPLEMENTED IN THE PROJEC.T VILLAGES

Activities	Limbgaon	Kondha
Sprinkler	3	40
Drip	0	35
FFS	1	2
PVC Pipes	0	22
Motor Pumps	6	12
Tractor	0	3
Farm Implements	0	30
Fruit Plants	16	0

[7] During the group discussion, it emerged that some time prevailing market prices doesn't cover the harvesting and transportation cost of the products. The farmers reported that in case bumper cropping season, they have to dispose the production of potatoes at the price of Rs. 2-3 per kg.

[8] It was emerged during FGDs with farming communities in Limbgaon and Kondha villages.

[9] The total cost of plantation on 20 hectares was Rs. 62 thousand. At the first instance the cost of plantation has to paid by the beneficiaries and later on the same is reimbursed by the project authority after the approval of the concerned committees.

[10] It is emerged during the group discussion with the group of famers in the villages.

Source: From the record relating to project implementations

The interventions in terms of mini-tractor and agricultural implements were also at the final stage. In case of farm implements farmers have shown the keen interest[11].

Emerging threats and Future Expectation: Field level verification reveals some insights that can be useful for effective implementation of the project. These conclude as following.

Emerging Threats

a. The later reimbursement of payment or provision of matching grants for the purchase of infrastructure assets can push the resource poor farmers into the trap of rural indebtedness. In case of defaulting situation, when bank do not provide the credit facilities, farmer has to approach the local money lenders. To the farmers, such strategy becomes struggle for survival and there is possibility of growing indebtedness among the farmers.
b. It is noticed during the field verification that target groups and knowledgeable persons were not aware about background and ultimate objective of the project. Therefore, it necessary to improve the awareness of the poor farmers and landless households about the ultimate objective of the project and expected interventions i.e. enhancing climate resilience of farmers and also sensitize them about climate change.
c. Specifically, livestock development and source of fodder is remained untouched in the project, There is need to focus on feeling resources so that livestock economy can be strengthened, which is an integral part of the farm sector as well as a major source of livelihoods for resource poor households. The farmers suggested for introducing fodder crops verities which can be helpful for increasing the supply of crop residues as fodder to the animals. Certainly, it may not be the focus of the project, but it is essential for sustaining the livestock economy, which is one of the major sources of household income.
d. In villages where the water reservoir is created as community pond or individual farm pond and it is being used for irrigating horticultural / seasonal crops during rabi and summer season by recycling the ground water , the adverse effect of ground water depletion may takes place in future and the area may be declared as dark zone area when the ground water development is reached beyond 85% and more. Under such situation , the project should facilitate with GWDA to develop certain guidelines to the groundwater user , not to exploit ground water extensively. The alternative solution in such area is to develop maximum number of ground water recharging structures to keep the ground water in a balance form for longer period.

1.2 Suggestions

The farming communities have certain expectations for pushing up crop production in sustainable manner as following.

- Climate variability/ change and faster extraction of groundwater resulted in aquifer depletion. In other words, there is a substantial failure of water sources. As already promoted though the project, but these should be more thrust on rehabilitating the dysfunctional and failed water conservation sources.

[11] It was emerged during focus group discussion with the farming communities.

- As there is a scarcity of electric power for irrigation purpose, promotion of solar energy system can be best alternative of energy.
- There is urgent need to make provision for facilitation of loan or provision of advance to the poor farmer applicants. Certainly, it will help them in escaping the poverty trap.
- The irrigation structure like, motors and other pump-sets can be provided to the farmers in joint ownership if the farmers have limited size of land resource and poor economic position.
- Capacity building program should be the major focus of the project implementation.
- There is need to give due attention of the policy makers to make certain reform in the policy to transfer of cattle population from animal endowed areas to other areas where the demand for animals for crop production.

Field visit report – M&E Expert and Team Leader

For understanding the agriculture related situation and to get the feedback on the project implementation Karanjgaon in Vaijapur block and Abdimandi in Khultabad block in Aurangabad district were visited. The key observations from the field visit have been listed below.

Village Karanjgaon in Vaijapur block of Aurangabad district of Maharashtra is in the first phase of the PoCRA. The village has population of around 1300 people. The following are the key observations from the village

Agricultural practices in the village: Agriculture is the main stay in Karanjgaon. The village has comparatively high numbers of big and rich farmers. The main crops include Cotton and Soybean. Most farmers had cotton as their main crop. This cotton crop in this region witnessed 5-6 times plucking. Farmers reported of difficulties in getting requisite labor hours for cotton plucking. Some farmers are also engaged in horticulture plantations. Pomegranate and Sweet Lime are two most common plantations found here.

Marketing of produce: The cotton is generally sold in bulk to the traders who collect the produce from the farmers on the field. The Soybean is sold to the traders in the APMC or in retail. The average rate of cotton is INR 4000-5000 per quintal. The average rate of soybean was reported at INR 2800 to 3300 per quintal. The farmers also reported about the high transportation cost of produce to be carried to market, in case of Soybean thus reducing their profits.

Water Conservation works status: The village is in second phase of project, the DPR and village development plan have been prepared. But the only works that are initiated in the village are those of community farm ponds and individual farm ponds. During the site visit, it was observed that one farmer has increased the depth of newly constructed community farm pond by 1 meter from planned to increase the water storage capacity. In one case, the water was taken from the well to fill his own farm pond. There are still more applications that are made for farm ponds and horticulture by other farmers in the village.

Only few years back, the watershed conservation work was carried out in this village by Bajaj Auto CSR. Therefore, watershed activities have been covered in most of the potential sites. However, there is scope for compartment bunding in the village.

Village Institutions: During the visit discussion, it was observed that there was no regularity in the conduct of VCRMC monthly. As reported, the last meeting was conducted 4 months back. There was also no records of documentation or proceedings of the meeting from last three months. There was neither any notice board with information and details of VCMRC or PoCRA.

The SHGs in the village were found to be functionally active but reported that they were not engaged in any of the PoCRA activities. SHGs in the village preferred to distribute money amongst themselves up to INR 1 lakhs at the interest rate of 2 %.

Suggestions and Recommendations

Large amount of water is pumped for filling the farm pond. This is a major concern as it gives stress on the aquifer as well as groundwater. A policy should be made to optimize the use of ground water and using it to fill the farm ponds. GSDA can play important role by mapping the areas where water levels are sufficient enough. Permission should be given only to those wells to pump water for filling the farm pond, where water levels are sufficient enough.

A monitoring application for activities and conduct of VCRMC can keep a check on the regularity of meetings conducted by VCRMC. SHGs can be trained in various income generation activities under PoCRA and create dual benefits.

Village Abdimandi

Village Abdimandi, lies in close proximity to Aurangabad City, on the highway connecting Aurangabad to Khultabad. Abdimandi has population of around 3000 people with 650 households. The village is in second phase of PoCRA.

Agricultural practices: Horticulture is the mainstay of the economy of Abdimandi. Around 160 Households are practicing horticulture. 125 Households out of 165 are engaged in cultivation of Fig. Some other common plantations include pomegranate and sweet Lime. Farmers requested to include Fig plantation in the PoCRA list of plantations as many farmers in the village are interested in expanding their fig plantations.

Progress of works in PoCRA: Village Abdimandi has very low application rate as well as disbursement rate for the grants under PoCRA. 64 farmers have applied for the activities in the village out of which only 31 have received the pre sanctions for the works. Only 3 farmers have so far received the grant in their account.

Low interest in PoCRA DBT scheme is also because Bajaj Auto CSR has been giving a subsidy of 80 % on drips and sprinklers, It was also found that some farmers are purchasing a lower quality drip and sprinkler set without the bill and thus saving due to cheaper price as well as no GST to be paid.

<u>Recommendation</u>

Inclusion of Fig plantation in the list of horticultural crops supported under PoCRA is recommended, as it is main source of livelihood in the cluster. This will help in increasing the economy as well as interest of the farmers in the village. More focus needs to be given on renewal of water harvesting structures in the village as limited number of sites are available for NRM works.

7. Key Observations, Challenges and Solutions suggested

The key observations based on the second round of concurrent monitoring are summarized as follows:

1. Individual benefits provided to potential beneficiaries under PoCRA are observed to have a promising uptake. The beneficiaries of these assets acknowledged that such assets have helped in increasing water availability and agriculture productivity and hence enhanced their income.
2. Project staff and village level institutions have been instrumental in spreading awareness and providing support to the farmers in accessing the project benefits.
3. Activities or assets which address the issue of water availability are found to be on high demand as water availability of for irrigation is the most critical issue faced by farmers. These assets which were most in demand include pipes, pump sets, open dug wells, sprinklers, drip irrigation and farm ponds. For landless, small ruminants was the most availed asset as it contributed to direct increase their income.
4. The satisfaction of beneficiaries from the support provided by project staff was observed to be higher as compared to similar beneficiaries in comparison villages. Majority for individual activity beneficiaries reported that they did not face any issue is purchasing the assets as per project guidelines.
5. The major reason for beneficiary respondents who had received pre sanction but had not initiated the activity was lack of funds or other priority expenditures. Most of these respondents were still interested to purchase/construct the asset.
6. The NRM community works were found to be in initial stages of implementation and thrust is required from the management to expedite their implementation.
7. As understood during expert visits, condition of a lot of NRM structures build under previous government projects was not found to be good. As part of the community works under PoCRA, there should be focus in rejuvenating these structures.
8. Farmer Field Schools are effectively being implemented and majority of the FFS beneficiaries reported that they have benefitted from participating in FFS. The most adopted FFS technologies include seed treatment, intercropping, use of improved seed varieties. More focus needs to be given to ensure maximum participation of farmers in FFS sessions (specially women farmers) and ensure that they adopt the demonstrated technologies.
9. Also, majority of the FPOs were also found to be in application and pre sanction stage. They need support in getting their loans processed and starting their value addition activities.
10. Use of technology in filing applications under PoCRA has been appreciated by all stakeholders as it has helped to bring transparency and effectively monitor the project implementation. However, the application process needs to be strengthened to make it more user friendly in areas with poor internet connectivity. FFS application needs to be adjusted so that facilitators can concentrate on the demonstration session rather than filing the details in the application.
11. Majority of the VCRMCs set up as part of the project are formed as per the project guidelines. and they meet regularly to discharge the project mandate. Capacities of VCRMCs may be enhanced with special focus on documentation of the processes and meetings.
12. Capacity of Krushi Tai's recruited as part of the project needs to be built so that they can effectively fulfill their responsibilities
13. Climate variability/ change and faster extraction of groundwater for irrigation can result in aquifer depletion. Along with the individual benefits, community interventions for increasing the ground water level should be implemented at same pace to maintain the water balance.

The key challenges in the project implementation were identified and their solutions to address the same are suggested so as to further improve the implementation of PoCRA.

Table 13: Summary of identified issues and proposed solutions

S.No.	Challenge	Action Suggested
1	**Individual Farmer Matching Grant Activities**	
1.1	Obstacle in arranging money by the potential or interested beneficiaries for upfront payment to purchase/ construct the assets is the key challenge reported.	• It can be considered to develop mechanisms through which advance payment or partial payment can be provided to beneficiaries who have received pre sanction. • Support by project to facilitate access to institutional finance for beneficiaries who have received pre sanction
1.2	Obstacle in applying through DBT portal due to network issues. Beneficiaries and project staff face challenge in application due to non-availability of good internet access in many villages.	The offline application module should be strengthened. Also, the application needs to be further improved to be conducive to work in low speed internet connectivity and in areas with poor internet connectivity.
1.3	The poorest of the poor or most vulnerable beneficiaries are not able to access project benefits. There is risk that economically vulnerable beneficiaries may fall in debt trap if they take loan for asset purchase and are not able to repay them	The subsidy amount for the poorest of the poor and most vulnerable households in each village should be reassessed. It should be assessed if it is feasible to provide credit support or interest free loans to such beneficiaries.
1.4	Lag in implementation of project activities or delay in application processing due to high workload of project staff • Many CA's, AA's reported that they have 6-10 villages, which lowers their response time • Delay in spot verification and application processing reported by beneficiaries due to high workload of AA • Reported by all stakeholders ranging from DSAO, SDAO, CA and AA • Field staff has to work on multiple schemes and also other government activities (e.g. election duty) • SDAO has to directly co-ordinate with AA, CA and there is no mid-level between SDAO and the AA and CA	• Manpower available for project implementation should be accessed and increased if required. • Hardship allowances and extra travel allowance can be provided to field staff working in difficult terrain or having high workload • Role of CA and Krushi Tai should be strengthened so that they can support farmers in DBT application. • Involving Taluka Officers in project implementation who can act as a layer between SDAO and AAs.
1.5	Farmers or potential beneficiaries face difficulty in applying through DBT portal on their own.	• Krishi tais should be trained in each village so that they can help the potential beneficiaries to apply through DBT portal. • VCRMC or Gram Panchayat should provide support to the potential beneficiaries who are not able to apply on their own
1.6	Challenges were reported in executing goat rearing activity • There is problem of getting the certificate of being landless from the authorities	• The guidelines for implementation of this activity should be reassessed and further simplified to the possible extent. • Support of livestock department should be taken to implement this activity, or the project staff should be technically capacitated to implement this activity.

S.No.	Challenge	Action Suggested
	• Higher chances of fraud and duplication reported for this activity • Lack of expertise of Agricultural department in handling the Goat raring activity (Livestock Department should be involved)	
1.7	Challenges reported for horticulture and agroforestry activities: The key project stakeholders and SDAOs pointed that agroforestry activity requires extensive monitoring as the matching grant amount has to be given in period of four years.	• To reduce the burden on the staff it was suggested that lesser number of payment milestones should be considered for this activity. • Inclusion of horticultural crops which are traditionally cultivated in the project area was also suggested. E.g. fig cultivation in Khultabad block of Aurangabad district.
1.8	Other relevant activities should also be included in the Individual matching grant component of the project	The specific activities or benefits that were suggested to be included under individual activities supported through POCRA are listed below • Boundary protection for farm ponds to protect the farm pond and its lining • Matching grant for solar energy pumps as they would help to save electricity and reduce greenhouse emissions. Also, they would be convenient to farmers as currently farmers have to go to their fields at night-time (when electricity is available) to irrigate their fields • Matching grant for fencing or boundary protection of their farms as there is risk of crop damage due to animal attack • Matching grant to develop individual level storage facility E.g, individual storage was requested for onion. Farmers in VCRMC committee reported that it is difficult to manage in community storage infrastructure and it could lead to quarrels amongst people. • Due to electricity availability with low voltage, the motor set purchased as per guidelines (ISI marked) does not work. It was suggested that more flexibility should be provided for asset purchase. (*This feedback was received specifically in Janefal Village, Phulambari Taluka, Aurangabad*) • It was suggested that subsidy on pipes should be reassessed as is less as compared to their current market price.
1.9	Delay in spot verification and sanction of application from the project staff	• Stricter project monitoring to avoid delay in spot verification and processing of applications • Understand the challenges faced by the project staff which are leading to delay in spot verification and application processing and address them.
2	**Farmer Field School**	
2.1	Ensuring maximum participation by guest farmers in FFS session and adoption of climate resilient technologies by them is the major challenge in implementation of FFS	• Combined efforts by AA, FFS facilitator and influential village residents is required for motivating farmers to attend FFS sessions. • Exposure visits and visits to KVK should be conducted to motivate the farmers and showcase them the advantages to adopting climate resilient agriculture technologies.

S.No.	Challenge	Action Suggested
2.2	Participation of female farmers is reported to be limited	• Women specific FFS sessions(which are already being conducted) should be further strengthened and promoted • Timing of the session should be as per the convenience of most women. • It should be ensured that Krishi tai play an active role in mobilizing the women farmers to attend FFS session • VCRMC committee members, CA and AA should motivate the male farmers to encourage the females of their household(actively involved in framing)to attend FFS sessions
2.3	Some FFS facilitators have reported that too many details need to be captured in the FFS application during the demonstration sessions, which reduces their focus on the sessions as they are not able to maintain eye contact with the farmers E.g. The length of AESA observation module was suggested to be decreased.	• It is suggested that the information to be entered in the FFS application by the facilitators should be reassessed so that they can concentrate more on conducting the session and interacting with guest farmers. • Details to be captured should be customized based on the crop. E.g. details like boll/era heads are asked for Tur, which are not relevant to the crop. • It was also suggested that the photographs to be captured for each session should be reduced.
3	**Community Benefits**	
3.1	Community NRM works were found to be mostly in planning stage	• More thrust needs to be given in expediting the implementation of community NRM works. Timelines should be set for execution of these works and the implementation bottlenecks should be resolved
3.2	Limited sites for major activities of soil and water conservations such as Check Dams and Earthen Nala Bunds	• Focus on rejuvenation of existing soil and water conservation sites through their repairing and maintenance activities such as desilting, leakage repair etc. This will increase the capacity of existing structure for water storage.
3.3	Time lag if any in receiving matching grant for community farm pond becomes a major challenge for the beneficiaries . It has been reported by a few beneficiaries and VCRMC members that time lag if any in receiving matching grant becomes very challenging for community farm pond beneficiaries as the investment required for constructing a community farm pond is very high. If this happens frequently, it also becomes a demotivating factor for other potential applicants.	• It should be ensured that the matching grant is received withing the stipulated time period. Some beneficiaries also complained that the subsidy for community farm ponds should be increased.
3.4	Suggestion to provide flexibility to develop customized community projects	• Another feedback which was received from the community was that flexibility should be provided to develop customized projects which can help to access the water availability of the farmers. E.g. In Hamrapur village, Vaijapur taluka, Aurangabad a river flows near their village and water is available in the river for 8 months. If PoCRA can support to build a community harvesting structure and water can be drawn from the river, can solve the issue of water availability for the nearby farmers.
4	**POCRA supported FPO beneficiaries**	

S.No.	Challenge	Action Suggested
4.1	Challenges in accessing bank loans by FPOs/FPCs Getting bank loan was reported to be the key challenge faced by FPOs	• Facilitation support should be provided to the FPOs so that they can avail bank loan. • Capacity of the FPO's needs to be strengthened so that they can make more bankable proposals.
4.2	The board and Directors/CEOs of the FPOs lack capacity to develop business plan and effectively run their FPO. Also, many FPOs face challenge in ensuring working capital required to run their operations smoothly.	• The project supported FPOs should be provided professional capacity building trainings to make bankable business plans . • The SIYB (Start and Improve Your Business) training (conceptualized and implemented by ILO) for Board and top management team is recommended
4.3	Market linkage in both wholesale and retail market is one big challenge. In wholesale market they find difficulty to compete with their competitors on pricing, whereas in retail market, developing a brand image is a major challenge.	• FPOs dealing with same produce should aggregate their product and market it as one brand. E.g., they can be allowed to market their produce under a brand formulated by PoCRA (though several technical and legal aspects need to be studied for assessing the feasibility of the same).
4.4	FPOs lack capacity in dealing with GST/financial compliances. Legal advisors charge huge fee for complying GST and there are fine for non-compliance.	• Board members of the FPOs should be trained on financial management including tax compliances so they may file taxes themselves and their dependency on legal advisor is comparatively less.
5	**Other Key Challenges and suggestions**	
5.1	Project stakeholders reported Improper micro-planning and commitments given by the non-technical staff of Micro Planning agencies leading to poor community work planning	• Involvement of technical staff such as AA and TAO along with agency for site selection of structures like check dams and earthen nala bund. There is willingness from the department persons to participate in the process.
5.2	Krushi Tais who have been recently recruited need to be capacitated so that they can perform their duties effectively	• Capacity building trainings and refresher trainings need to be conducted for Krushi Tais so that they understand the project and their roles and responsibilities well. It should be ensured that honorarium of all Krushi Tais are paid timely to keep them motivated.
5.3	It was observed that many VCRMC were not aware of the different registers that need to maintained by them	• Capacity building of VCRMC required to ensure that they are aware of the different registers/documents to be maintained by them • Regular monitoring by project staff to ensure that the registers are maintained and updated on time

8. Progress Monitoring Based on Results Framework Indicators

As part of the concurrent monitoring, progress monitoring has been done by tracking the progress of the Results Framework indicators that need to be tracked on semi-annual basis. The below table presents the progress on these results framework indicators at the time of first round of concurrent monitoring.

Table 14:Progress monitoring based on RF indicators

Indicator Nor[12]	Indicator	Measurement technique and data source	Progress at CM Round 2
5	*Number of farmers reached with agricultural assets or services (% of female)*	The data of number of farmers reached with assets or services has been collected from the project MIS, associated applications, and relevant project personnel from PMU. The number of direct beneficiaries of the PoCRA include:	Total number of farmers/beneficiaries reached through the project till 30st September 2019 is 274123 (15.26% of them are Females i.e. 41820) .
		1. The data on individual grant beneficiaries has been taken from DBT portal	Total Disbursement online- 7742 (1650 Female and 6090 Male) Total Registrations till date- 165012 (133074 males and 31938 females)
		2. The data of beneficiaries of FFS has been taken from FFS application	*Total Number of FFS participants till date are 98160 (4.13 % of them are female). The total number of Guest farmers are 93555 and host farmers were 4605.*
		4. People who have availed trainings under the program.	652 trainings (with participation from 4329 male and 5020 female); 231 workshops (with participation from 792 males and 799 females) and 1 exposure visit (with participation from 6 males and 5 males) have been conducted.
6	*Farmers adopting improved agricultural technology promoted (% of female)*	This indicator has been tracked based on the beneficiary survey conducted as part of the concurrent monitoring. The surveyed beneficiaries will be enquired if they were adopting at least any of the improved agriculture technology which is promoted under the project.	Adoption of any agriculture technology was observed to be 92 % in beneficiaries in project arm and 90 % in beneficiary beneficiaries in comparison arm. *Though it is to be noted that the sample frame for concurrent monitoring are the farmers who have benefitted from PoCRA and similar schemes in comparison area. This would not be comparable with the sample in the evaluation surveys i.e. baseline, midline and endline. Also, the sample size covered in concurrent monitoring is very less as that compared to evaluation surveys.*
7	*Area provided with new/improved irrigation or drainage services (in ha)*	The data of area with new or improved irrigation services and drainage services through individual activities under the project has been taken from DBT portal report. The data of community level new/improved irrigation services has been taken from Project Specialists of the project districts.	Area provided with 1. Sprinkler and Pump together- 126 Ha, 2. With water pumps only - 1588 Ha, 3. With only pipes is 3031 Ha. 4. Sprinklers area covered- 687.6 Ha 5. Drip area – 421.2 Ha

[12] **as per PoCRA Results Framework**

Indicator Nor[12]	Indicator	Measurement technique and data source	Progress at CM Round 2
		Total area under Irrigation Projects= IP (Irrigation Project)$_1$*Area under irrigation project+ IP (Irrigation Project)$_2$*Area under irrigation project+ IP (Irrigation Project) $_n$*Area under irrigation project	Total Area – 5853.80 ha
8	*Surface water storage capacity from new farm and community ponds (in 1,000 m3)*	The data of individual level farm ponds will be taken from DBT portal report. The data of community farm ponds has been taken from DBT Portal . Total Water storage capacities of new Farm Ponds = FP (Farm Pond) $_1$*Storage capacity of FP+ FP $_2$*Storage capacity of FP+……+ FP $_n$*Storage capacity of FP Total Water storage capacities of new Community Ponds = CP (Community Pond) $_1$*Storage capacity of CP+ CP $_2$*Storage capacity of CP+……+ CP $_n$*Storage capacity of CP	2602.29 (1000 *m3*)
10	*Oilseeds (soybean), Pulses (pigeon, chickpea) production area under cultivation w/ certified seeds of improved varieties (share in %)*	The percentage area under cultivation for oilseeds (soybean) and pulses (pigeon, chickpea) *using certified seeds of improved varieties has been assessed based on the beneficiary survey as part of concurrent monitoring.*	% of area under cultivated using climate resilient certified seeds – • Soybean: 40 % in Project and 48% in comparison • Chickpea: 62% in project and 73% in comparison • Pigeon pea: 18% in project and 41% in comparison *Though it is to be noted that the sample frame for concurrent monitoring are the farmers who have benefitted from PoCRA and similar schemes in comparison area. This would not be comparable with the sample in the evaluation surveys i.e. baseline, midline and endline. Also, the sample size covered in concurrent monitoring is very less as that compared to evaluation surveys.*
11.	*Number of project-supported FPCs with growth in annual profits*	With the support of PS agriculture, the FPC representatives was contacted and their annual profit details of current year and last were enquired. Based on the analysis of the change in annual profits of the supported FPCs this indicator was to be calculated	NA *Project supported FPOs are the ones who have received the grant amount from PoCRA.* *After following up with PS Agribusiness from all districts it has been found that no FPOs have received the grant from the project till yet*
14	*Number of approved participatory mini watershed plans implemented /*	This indicator will be reported as an absolute number of participatory mini watershed plans approved by Gram sabha. The information is collected by the microplanning agencies from the offices of the SDAOs. The microplanning agencies submit the validated mini	Number of approved participatory mini watershed plans implemented / under implementation are 533 till 30TH September 2019 out of 533 villages in which implementation was done in year 1

Indicator Nor[12]	Indicator	Measurement technique and data source	Progress at CM Round 2
	under implementation	watershed plans to the PMU where the data is recorded by the M&E specialist.	

9. Analysis of project MIS data

This section presents the analysis of the projects MIS data from 1st April 2019 to 30th September 2019 for the registrations, applications and disbursements under DBT. For the rest of the sections, data is presented from the start of the project to 30th September 2019. This would help to understand the current implementation status of the project and draw insights from the same

Analysis of DBT MIS data

As per the PoCRA MIS data, a total of 1,13,466 beneficiaries have only registered withing the above-mentioned time period. The district wise distribution can be seen in the graph below. Jalna (20.14%) has the highest registrations, followed by Parbhani (14.59%), Beed (14.07%), Nanded (12.6%) and Latur (12.03%). Hingoli (6.9%), Aurangabad (9.74%) and Osmanabad (9.86%) have the least registration as per the current cycle of reporting.

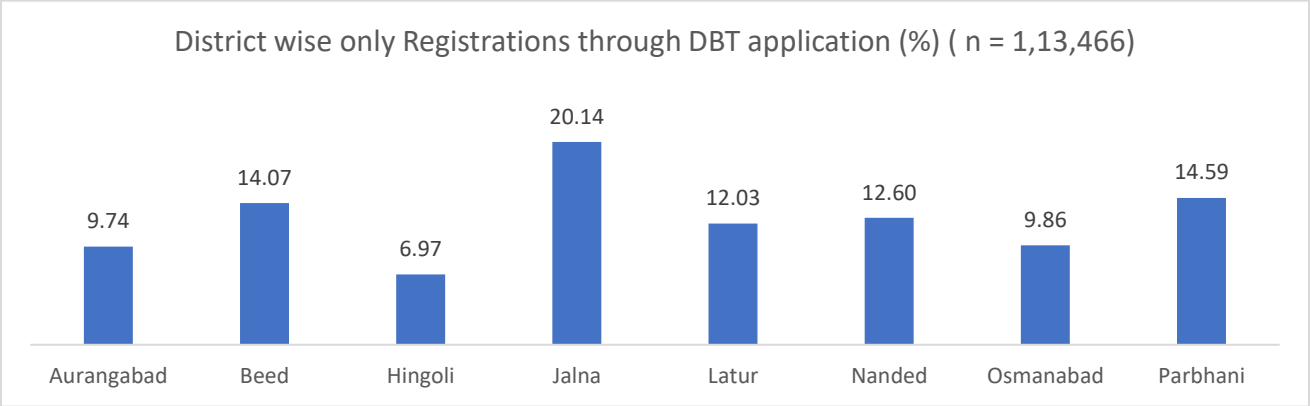


FIGURE 87:DISTRICT WISE REGISTRATIONS THROUGH DBT APPLICATION (%)

The graph below shows the priority category wise number of registrations. The maximum number of registrations are done by General Male (64.89%) and General Female category (21.23%), followed by SC Male (7.74%).

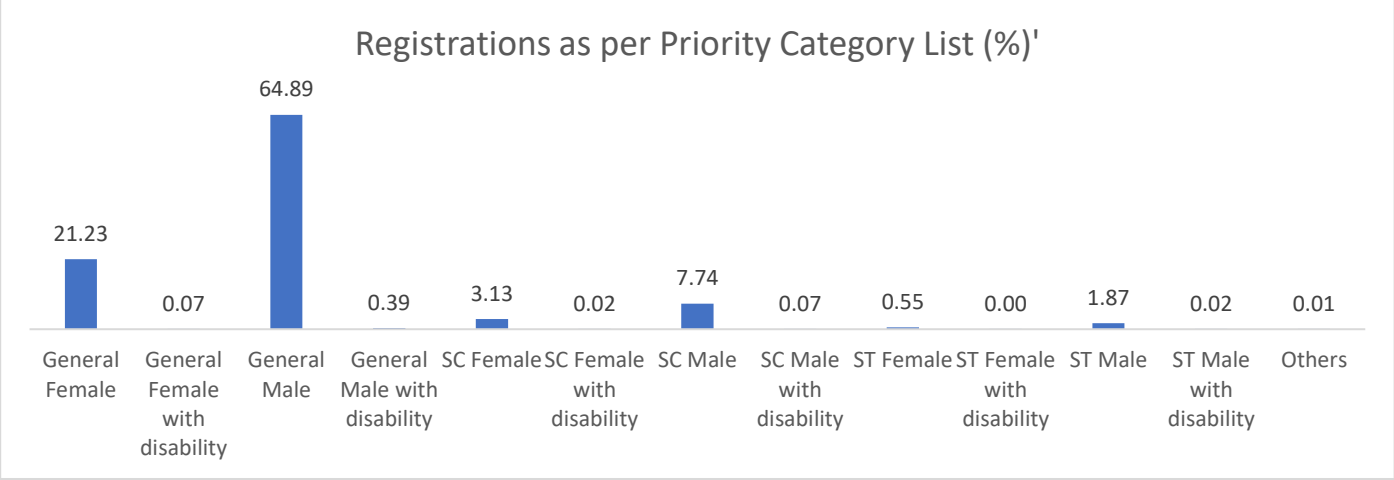


FIGURE 88:REGISTRATIONS AS PER PRIORITY LIST CATEGORY %

On analyzing the registrations based on landholding of farmers it is found that 42.87% of the registrations are from small farmers, followed by 32.72% by marginal farmers. There are 14.31% of the land less farmers who have registered. And the remaining 10.10% are in the category of others – medium and large farmers.

On analyzing the applications DBT data for this time period, as evident in the below graph above, one can infer that most of the applications were made by small and marginal farmers. There have been significant applications from landless farmers in Osmanabad (21.94%), Nanded (20.92%) and Latur (18.04%).

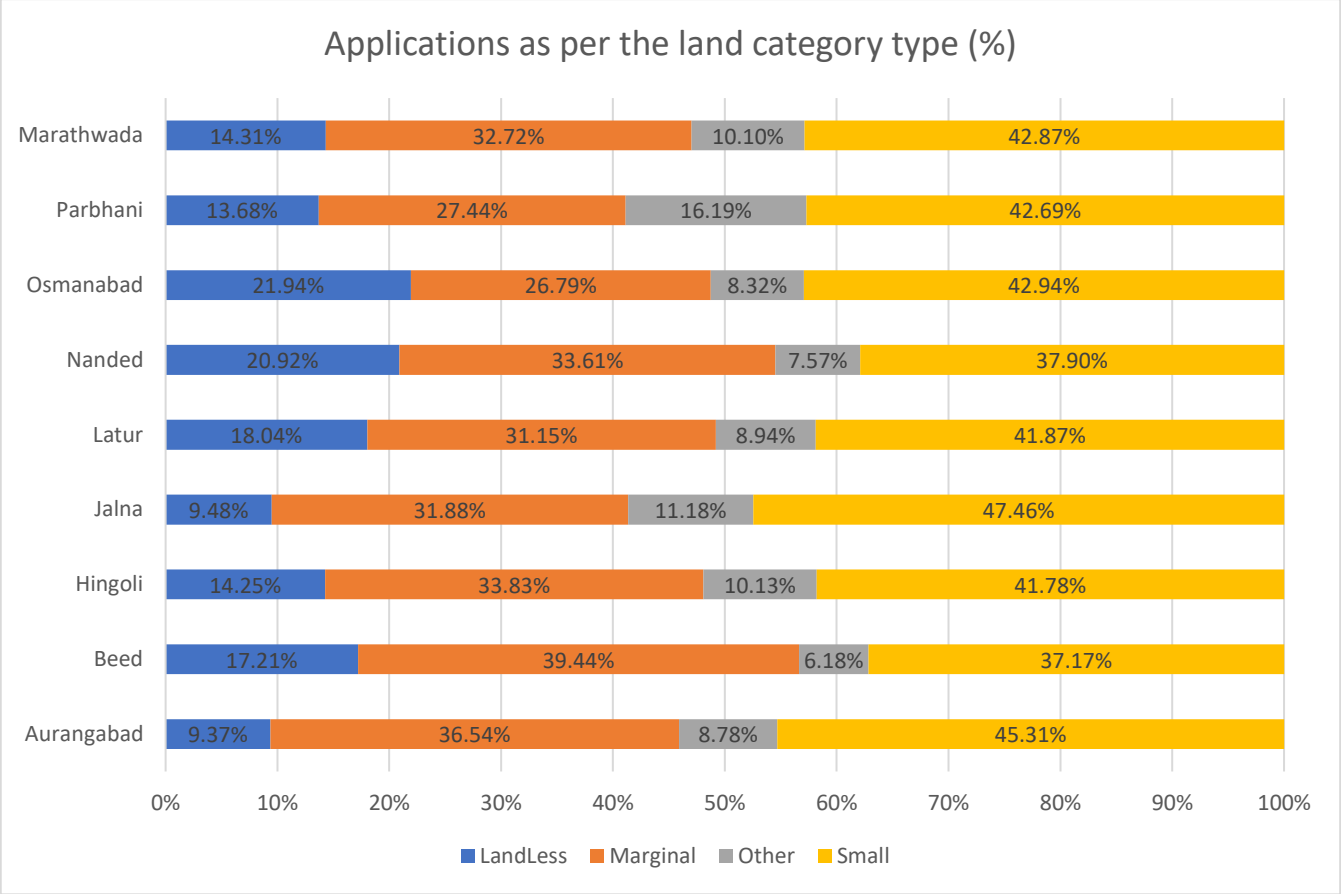


FIGURE 89:APPLICATIONS AS PER THE LAND CATEGORY TYPE (%)

The number and percentage of applications as per priority category can be seen from the table below. Highest applications come from General Male Category (69.98%), followed by Female Category (19.88%) and SC Male (5.69%).

TABLE 15: TOTAL APPLICATIONS AS PER THE PRIORITY LIST CATEGORIES (%)

Priority Category	Total Applications	%
General Female	49483	19.88%
General Female with disability	147	0.06%
General Male	174179	69.98%
General Male with disability	1048	0.42%
SC Female	4978	2.00%
SC Female with disability	30	0.01%
SC Male	14165	5.69%
SC Male with disability	136	0.05%
ST Female	948	0.38%
ST Female with disability	1	0.00%
ST Male	3761	1.51%
ST Male with disability	32	0.01%
Total	**248908**	**100.00%**

On analyzing the stage wise application status as presented in the below figure, one can infer that more than 60% of the applications are at the phase of preparation or pre-sanction Desk 1 in each of the district, with as high as 69.18% in case of Osmanabad and 71.22% in case of Aurangabad. The applications that have reached the Final phase of Sanction Desk-4 lie in the range of 2.6% (Jalna) to 12.7% (Hingoli). As analyzed in the above sections, lack of availability of upfront funds is the main reason why beneficiaries with pre sanction are not able to avail project benefits. It is suggested that measures should be taken (e.g. providing advance etc.) to enable these beneficiaries to avail project benefits.

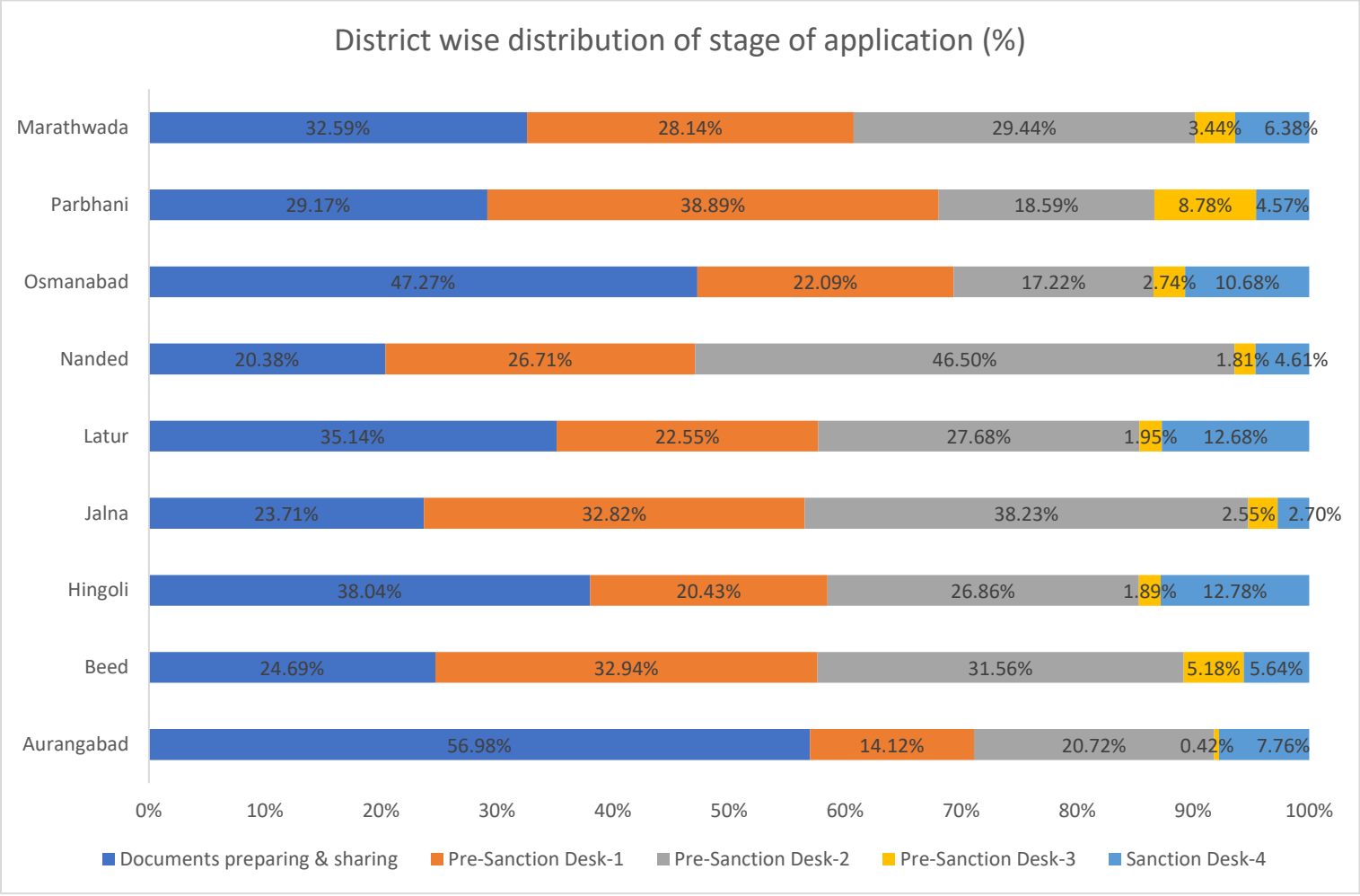


FIGURE 90:SUB-COMPONENT OF THE STAGES OF APPLICATION (%)

The table below highlights the different sub-components of work that have been sanctioned so far in various districts. Most of the works have been sanctioned in the districts of Jalna (61,049) and Parbhani (36,658) and least number of works are sanctioned in the districts of Hingoli (15,852) and Osmanabad (19,111). Maximum number of works are sanctioned in the components under protective irrigation (54,495), Integrated Farming Systems (44,079), Micro Irrigation systems (42,163) and Construction of new water harvesting structures (33,786).

TABLE 16: NUMBER OF SUB-COMPONENT WORKS SANCTIONED, DISTRICT WISE

Row Labels	Aurangabad	Beed	Hingoli	Jalna	Latur	Nanded	Osmanabad	Parbhani	Grand Total	% of Grand Total
Construction of groundwater recharge structures	314	261	69	685	123	95	117	222	1886	0.76
Construction of new water harvesting structures	3648	3623	2019	10808	1381	4714	2912	4701	33806	13.58
Demonstration of climate smart agronomic practices	305	230	85	101	253	86	19	133	1212	0.49
Enhancement in Carbon Sequestration	4096	6577	1076	10105	1429	1906	1492	4943	31624	12.71
Improvement of saline and sodic lands	5817	3010	2127	5433	1419	1670	2918	4256	26650	10.71
Integrated Farming Systems	4139	7618	2707	8345	4205	5965	4697	6394	44070	17.71
Micro irrigation systems	7608	4417	3175	11063	3715	3697	2116	6376	42167	16.94
On-farm water security	12	15	1	26	6	33	13	20	126	0.05
Production of foundation certified seed	14	48	699	473	2929	180	371	1357	6071	2.44
Protected Cultivation	522	339	98	1735	121	184	106	487	3592	1.44
Protective Irrigation	6995	8076	3590	11437	5340	5672	4202	9175	54487	21.89
Rejuvenation or desilting of existing water harves	159	244	60	529	172	94	88	189	1535	0.62
Soil Health Improvement	219	256	145	320	159	130	65	388	1682	0.68
Grand Total	**33848**	**34714**	**15851**	**61060**	**21252**	**24426**	**19116**	**38641**	**248908**	**100.00**

The below table presents the activity wise percentage pf applications received. Maximum applications are received for pipes (14.95%), water pumps (14.2%), small ruminants(13.7%), horticulture plantations (12.05%), drip irrigation (11.34%) and construction of open dug wells (8.08%). This is in line with the findings from the stakeholder feedback.

TABLE 17:ACTIVITIES UNDERTAKEN, NUMBER AND PERCENTAGE

Activity	No of Applications	%
Agro forestry	1400	0.56%
Apiculture	632	0.25%
Backyard poultry	5324	2.14%
Bamboo Plantation	235	0.09%
Compartment /graded bunding	126	0.05%
Construction of open dug well	20119	8.08%
Desilting/ repairs of old water storage structure	1535	0.62%
Drip irrigation	28225	11.34%
Farm ponds(includes farm pond lining, farm pond with inlet and outlet and grass cultivation, farm pond with lining, farm pond without lining)	13938	5.60%
FFS Host Farmer Assistance	1212	0.49%
Improvement through improved agronomic practices FFS	38	0.02%
Improvement through soil amendment application	53	0.02%
Improvement through sub surface drainage	37	0.01%
Inland fisheries	877	0.35%
NADEP Compost Unit (10X6X3 Ft)	654	0.26%
Organic Input production unit	241	0.10%
Other agro based livelihoods	464	0.19%
Pipes (HDPE/PVC)- 600 mt	37207	14.95%
Plantation of Horticulture	29989	12.05%
Polyhouse and polytunnels	1295	0.52%
Production of foundation & certified seeds of climate resilient varieties	6071	2.44%
Recharge of Open dug wells	798	0.32%
Sericulture	2495	1.00%
Shade net house	2297	0.92%
Small ruminants	34278	13.77%
Sprinkler irrigation	22085	8.87%
Vermicompost unit	787	0.32%
Water pumps	35408	14.23%
Well Recharge	1088	0.44%
Total	**248908**	**100.00%**

The graph below highlights the district wise number and amount of disbursements made. As can be studied from the graph, the highest number of disbursements were made in Aurangabad with a total of 2881 in number, worth INR 1,123.96 lakhs. The lowest number of disbursements were made in Nanded with only 196 number of disbursements, worth INR 33.5 lakhs. A total of 6881 disbursements have been made, with a total amount of INR 2331 lakhs crores. Interestingly, approximately 48% of the total disbursed amount has been made in the district of Aurangabad.

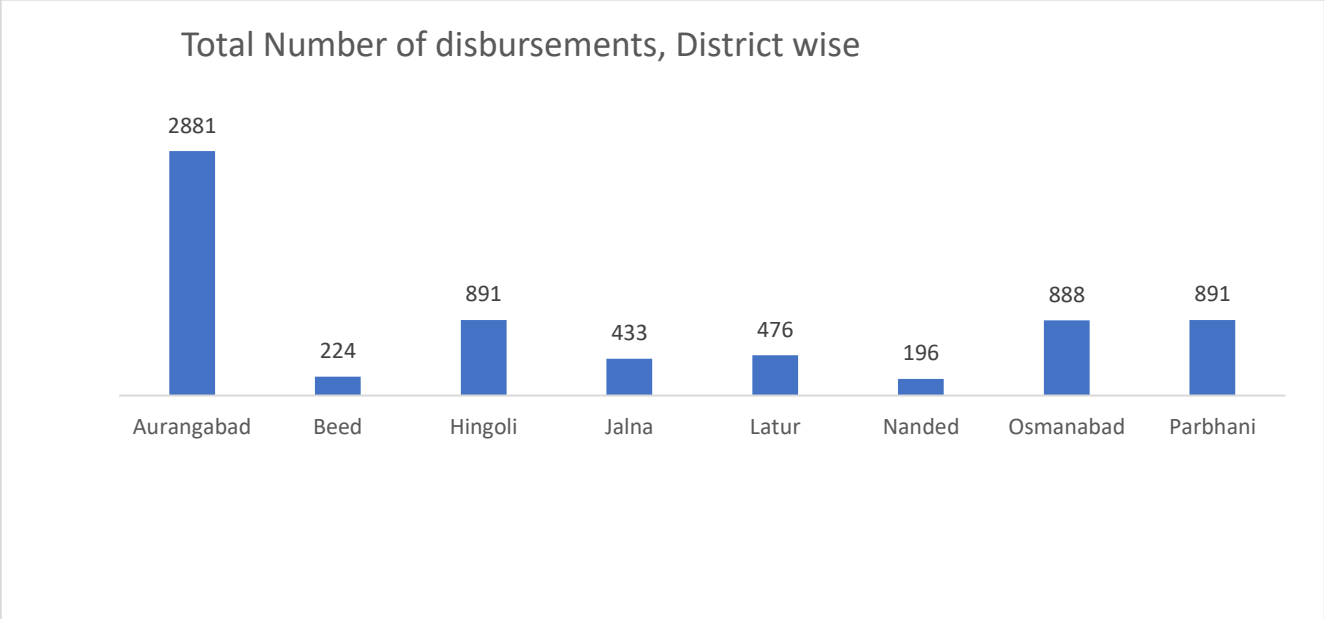


FIGURE 91: TOTAL NUMBER OF DISBURSEMENTS (DISTRICT WISE)

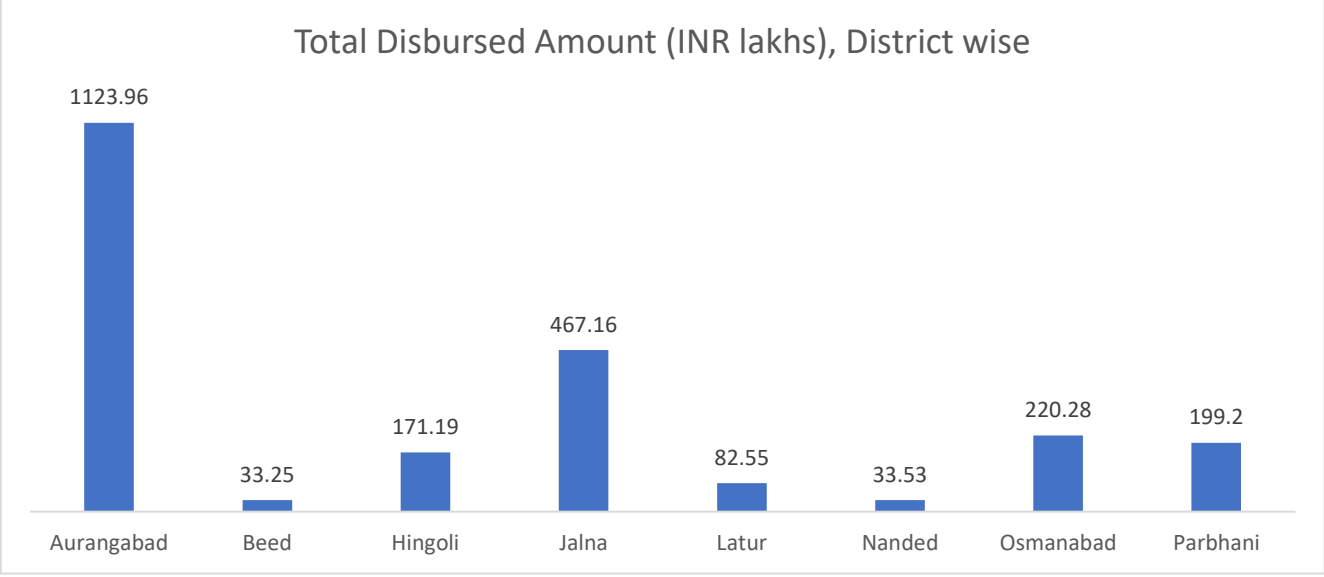


FIGURE 92: TOTAL AMOUNT OF DISBURSEMENTS (DISTRICT WISE)

The table below highlights the activity wise disbursements. Maximum number of disbursements were made for Pipes (41%) and water pumps (23%). However, the total amount disbursed under the activity is highest for farm ponds (43%), followed by pipes (16%).

TABLE 18: TOTAL NUMBER AND AMOUNT OF DISBURSEMENTS, ACTIVITY WISE

Activities	Total Count of Disbursements	%	Total Sum of Disbursed Amount	%
Agro-forestry	4	0.06	10,500	0.0
Farm Ponds	530	7.70	10,08,18,649	43.2
Construction of open dug well	32	0.47	57,54,000	2.5
Drip Irrigation	425	6.18	2,04,64,062	8.8
Farm Ponds	259	3.76	1,74,90,708	7.5
FFS Host Farmer Assistance	19	0.28	53,200	0.0
NADEP Compost Unit (10X6X3 Ft)	3	0.04	15,000	0.0
Organic Input production unit	1	0.01	2,714	0.0
Pipes (HDPE/PVC)- 600 mt	2823	41.03	3,92,56,045	16.8
Plantations of Horticulture	241	3.50	73,50,341	3.2
Planting Material -- Polyhouse/Shadenet	6	0.09	33,12,422	1.4
Production of foundation & certified seeds of climate resilient varieties	82	1.19	7,03,015	0.3
Recharge of Open dug wells-Other (Heavy Land with Concrete well)	3	0.04	32,107	0.0
Sericulture	15	0.22	1,89,403	0.1
Shade net houses	5	0.07	33,40,604	1.4
Small ruminants	248	3.60	92,10,353	4.0
Sprinklers	553	8.04	80,86,295	3.5
Vermicompost unit (10X3X2.5 Ft)	1	0.01	4,725	0.0
Water pumps	1626	23.63	1,69,63,645	7.3
Well Recharge	5	0.07	53,194	0.0
Grand Total	**6881**	**100.00**	**23,31,10,984**	**100.0**

Further based on the MIS data, the time taken for processing these disbursements was also analyzed. The table studies the amount of time it takes from the request for application submitted to the payment disbursed. There are three dates tracked – Date of submitting the request, Date of Start of Process and Date of Payment Disbursed.. The maximum number of days are spent between payment requested and the process to initiate. It takes on an average 28 days, with an average day in Latur at 26 and in Jalna to be at 38 days. The time from start of process to payment being done ranged from 3 to 4 days in all the districts.

One can therefore infer the average number of days for any applicant to put in request and receive the disbursement comes to be 32.8 days. It is important to note that the minimum number of days that an application took from date of payment requested to reimbursement is as low as 3 and 6 in most of the districts, while the maximum number of days it took is as high as 267 and 189 days. This highlights the extreme variation in the processing time of an application for disbursement of funds.

TABLE 19:NUMBER OF DAYS TAKEN IN THE APPLICATION PROCESSES FOR DISBURSEMENTS

District	Average days-Payment Requested to payment in Process	Average days-Payment in Process to Payment Done	Average days-Payment Requested to Payment Done	Max number of days from Payment Requested to Payment Done	Min number of days from Payment Requested to Payment Done
Aurangabad	26.60	4.35	31.0	189	3
Beed	32.44	4.61	37.0	181	5
Hingoli	27.74	4.75	32.5	164	3
Jalna	38.86	3.86	42.7	171	6
Latur	24.84	4.06	28.9	189	3
Nanded	34.64	3.84	38.5	149	4
Osmanabad	30.20	4.44	34.6	267	4
Parbhani	28.19	4.10	32.3	181	4
Grand Total	**28.49**	**4.33**	**32.8**	**267**	**3**

VCRMC Formations

From the table below, it can be observed that 98.9% of the VCMRCs were formed in the Phase 1villages (452 VCMRCs out of 457 Gram Panchayats in Phase 1). Similarly, in the Phase 2, 99.8% of the VCMRCs are formed (1116 VCMRCs out of 1118 Gram Panchayats). Thus, a total of 99.5% of the VCMRCs have been formed cumulatively (1568 VCMRCs out of 1575 Gram Panchayats).

TABLE 20: STATUS OF VCRMCS FORMED IN PHASE I AND PHASE II OF THE POCRA

District	Status of VCRMC formed								
	Phase-I			Phase-II			Total		
	Villages	Gram Panchayats	VCRMC Formed	Villages	Gram Panchayats	VCRMC Formed	Villages	Gram Panchayats	VCRMC Formed
Aurangabad	77	59	59	194	135	134	271	194	193
Beed	58	51	51	218	162	162	276	213	213
Hingoli	39	33	33	129	102	102	168	135	135
Jalna	67	55	55	188	162	162	255	217	217
Latur	94	79	77	144	124	124	238	203	201
Nanded	70	61	58	215	189	189	285	250	247
Osmanabad	48	43	43	137	117	117	185	160	160
Prabhani	84	76	76	145	127	126	229	203	202
Grand Total	**537**	**457**	**452**	**1370**	**1118**	**1116**	**1907**	**1575**	**1568**

Further it can be observed that Krishi Tai's have been appointed in 67.9% of the villages, with the highest in Beed at 80.4% and lowest in Latur at 38.2%

Table 21:Status of Krishi Tai appointment in pocra villages

District	Status of VCRMC formed			% of GPs with VCRMC formed	Krishi Tai appointed	% of villages with Krushi Tai Appointed
	Total					
	Villages	Gram Panchayats	VCRMC Formed			
Aurangabad	271	194	193	99.5	208	76.8
Beed	276	213	213	100.0	222	80.4
Hingoli	168	135	135	100.0	115	68.5
Jalna	255	217	217	100.0	180	70.6
Latur	238	203	201	99.0	91	38.2
Nanded	285	250	247	98.8	224	78.6
Osmanabad	185	160	160	100.0	123	66.5
Prabhani	229	203	202	99.5	131	57.2
Grand Total	**1907**	**1575**	**1568**	**99.6**	**1294**	**67.9**

Farmer Field Schools (FFS) Demonstrations

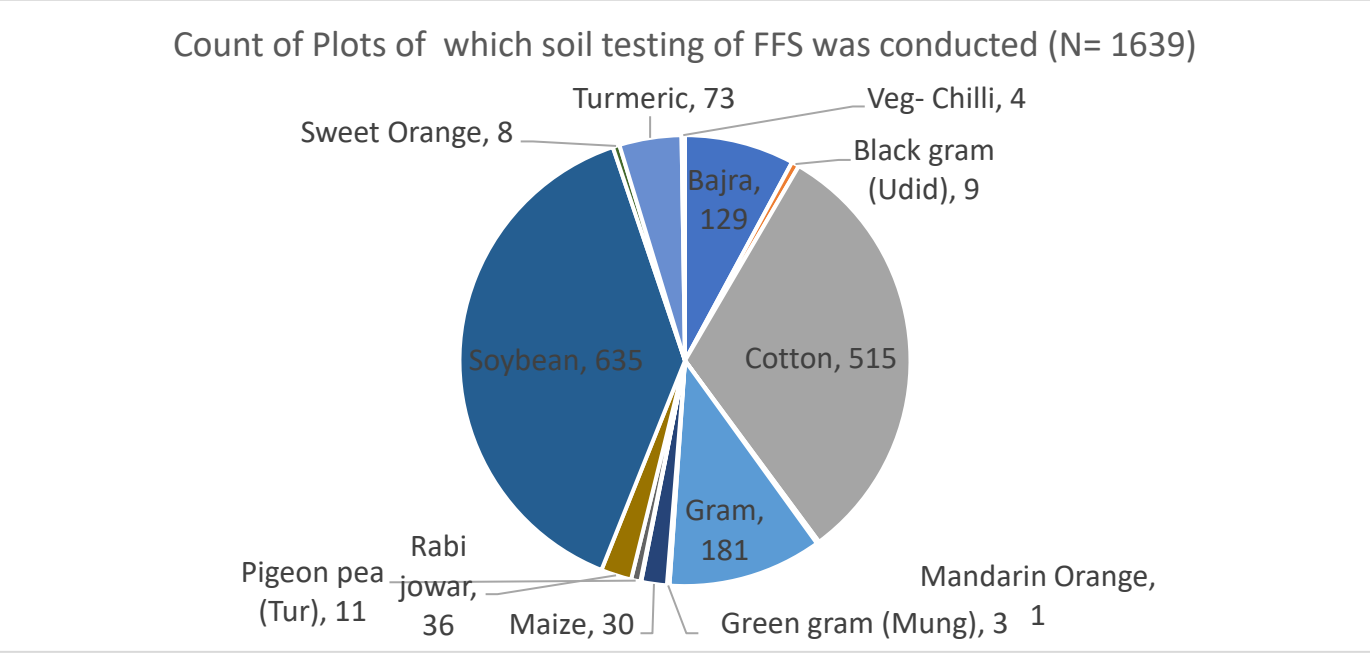


FIGURE 93: COUNT OF PLOTS OF WHICH SOIL TESTING OF FARMER FIELD SCHOOLS WAS CONDUCTED

The details of FFS plots where soil testing has been conducted has been presented below. As evident, 635 out of 1639 (38%) plots, where soil testing was conducted were for soybean demonstration. Around 31% of the plots were growing Cotton. Other crops that were being grown in the plots tested for soil included gram, green gram, rabi, jowar, pigeon pea, mandarin orange, maize, sweet orange, turmeric, bajra and black gram.

The below table presents the findings from the soil testing. The average value of Nitrogen (N), Phosphorous (P), Potassium (K), Sulphur (S), Iron (Fe), Magnesium (Mn) from the tests have been reported. The green highlights the highest and red indicates the lowest incidence of these values. The acidic or alkalinity value of the soil can also be studied from its pH value which lies in the range of 7 to 12 across the districts.

TABLE 22: VALUES OF SOIL NUTRIENTS FROM THE SOIL SAMPLES COLLECTED

Values	Aurangabad	Beed	Hingoli	Jalna	Latur	Nanded	Osmanabad	Parbhani
Average of n	160	12	301	1	23	96	383	206
Max of n	463	120	702	37	1875	176	525	420
StdDev of n	151	22	148	6	185	68	81	60
Average of p	50	43	24	14	16	20	18	12
Max of p	2793	456	627	393	562	51	290	23
StdDev of p	182	61	68	32	37	10	53	4
Average of k	1254	380	489	477	569	663	277	824
Max of k	366049	616	6660	734	2261	1236	407	61857
StdDev of k	16994	93	510	117	319	305	83	3929
Average of s	262	1	22	1	1	16	0	9
Max of s	51064	38	627	45	90	56	0	14
StdDev of s	3256	4	60	7	9	13	0	2
Average of zn	1	0	1	1	2	0	0	1
Max of zn	22	0	2	1	14	1	0	10
StdDev of zn	1	0	0	0	2	0	0	1
Average of b	1	0	1	1	2	0	6	1
Max of b	8	3	5	45	20	0	10	1
StdDev of b2	1	0	0	7	5	0	3	0
Average of fe	1	0	6	2	9	2	2	4
Max of fe	9	1	20	11	19	4	6	11
StdDev of fe	1	0	3	2	4	2	1	3
Average of mn	14	0	8	9	15	2	0	9
Max of mn	3022	12	86	19	32	3	5	75
StdDev of mn	142	1	10	5	6	1	2	7
Average of cu	2	0	3	1	3	0	1	3
Max of cu	21	2	6	2	11	1	6	9
StdDev of cu	2	0	2	0	2	0	1	2
Average of ph	**8**	**8**	**12**	**8**	**11**	**8**	**7**	**8**

The total number of Farmer Filed Schools established in Rabi and Kharif Season of 2018 are 1434 and the total number of Farmer Field Schools established in the Kharif season of 2019 are 3450. The range of total incidences across the districts ranged from 8.1% (Beed) to 17.9% (Latur) in 2018 and 9.1% (Hingoli) to 15.4% (Nanded) in 2019

TABLE 23: TOTAL NUMBER OF FARMER FIELD SCHOOLS ESTABLISHED

District	FFS – 2018				FFS - 2019	
	Kharif	Rabi	Total	% of Grand Total	Kharif	% of Grand Total
Aurangabad	154	16	170	11.9	472	13.7
Beed	116	0	116	8.1	504	14.6
Hingoli	78	39	117	8.2	315	9.1
Jalna	134	67	201	14.0	489	14.2
Latur	178	79	257	17.9	335	9.7
Nanded	140	63	203	14.2	530	15.4
Osmanabad	94	47	141	9.8	355	10.3
Parbhani	164	65	229	16.0	450	13.0
Total	**1058**	**376**	**1434**	**100.0**	**3450**	**100.0**

The Impact of FFS demonstrations can be seen in the increase in yields of the crops. It was as high as 51% increase in pigeon pea yield to moderate value of 8% increase in yield of Black Gram (Urad).

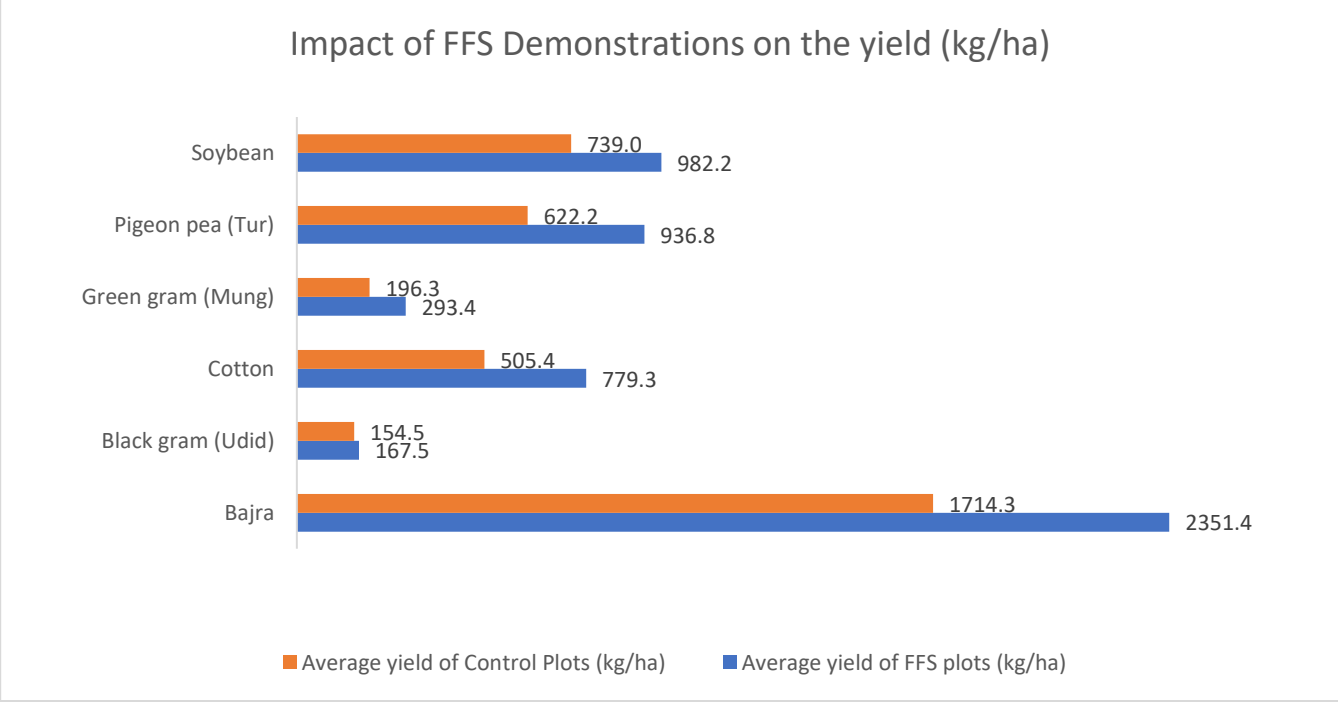


FIGURE 94: IMPACT OF FFS DEMONSTRATIONS ON THE YIELD (KG/HA)

The figure below highlights the average increase in the yield of crops in FFS Plot.

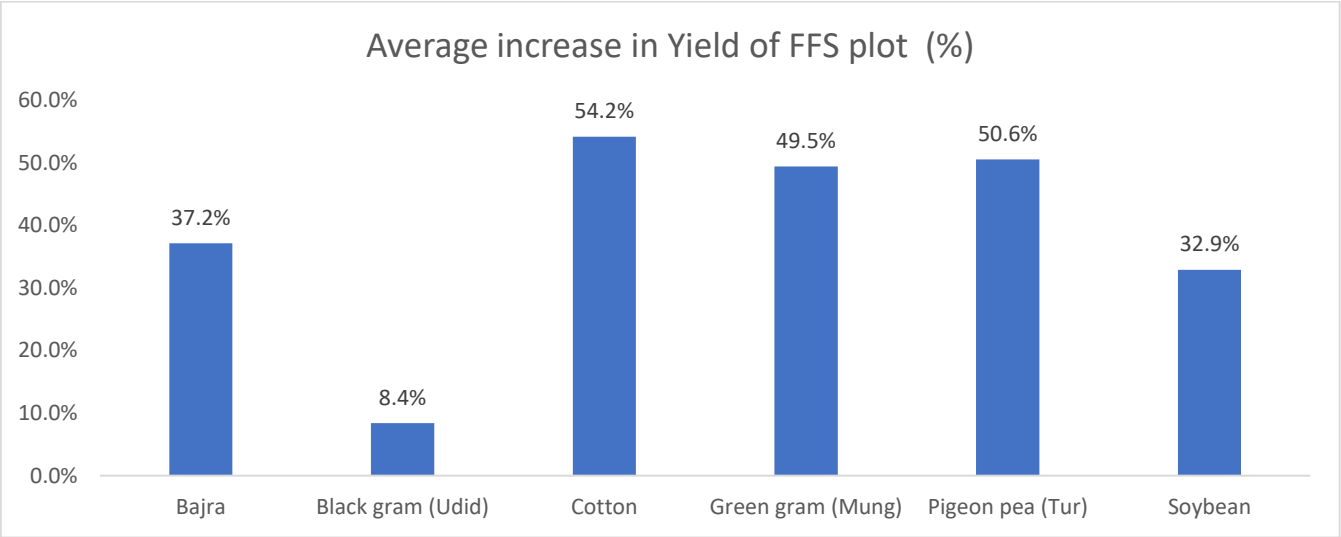


FIGURE 95:AVERAGE INCREASE IN YIELD OF FFS PLOT

Status of supported to FPOs and SHGs under PoCRA

This sub section presents the FPO/SHG support status during the aforementioned period of concurrent monitoring. The figure below highlights the number of proposals that were identified, pre-sanctioned and approved by the banks. The highest number of proposals came from Jalna (27). The highest number of pre-sanctioned proposals are also from Jalna which is 9 and the highest number of proposals approved by Banks is 3 each in the districts of Jalna and Nanded. The lowest number of identified proposals come from Aurangabad (8) and the lowest number of pre-sanctioned proposals are in Beed (3). Osmanabad and Hingoli districts did not witness any proposals approved by the banks and thus come lowest in their score

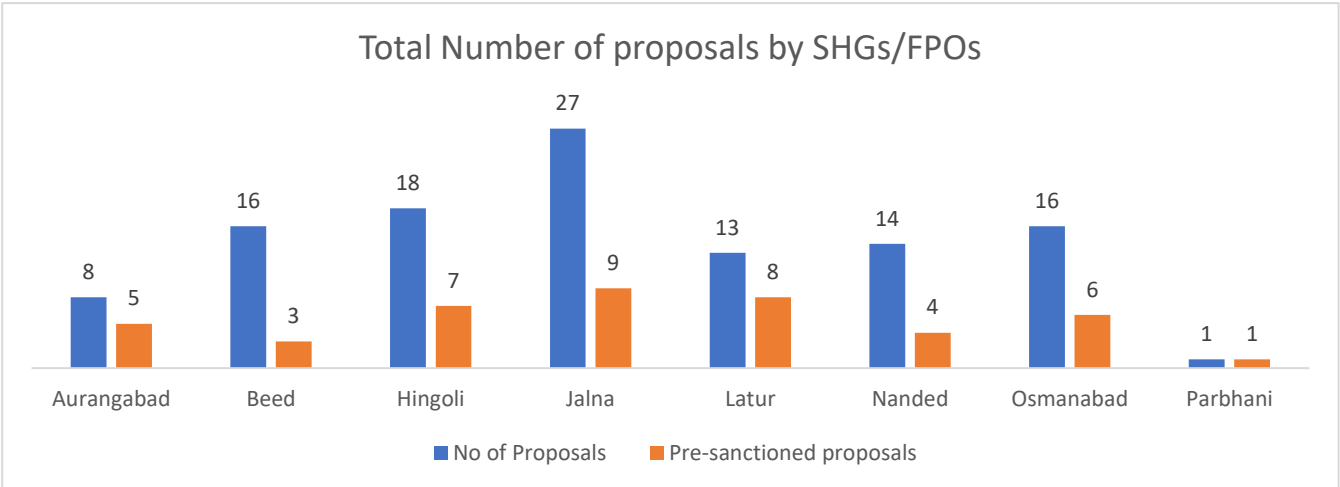


FIGURE 96:TOTAL NUMBER OF PROPOSALS BY SHGS/FPOS

It can be studied from the below two tables that a total of 24 FPOs and 19 SHGs have been provided with pre-sanctions worth INR 1251 lakhs and INR 399 lakhs respectively. Maximum amount and investment is requested for in case of FPOs is in setting up of Godown. A total of 8 pre-sanctions have been made worth INR 477 lakhs. A substantive amount of INR 255 lakhs and INR 151 lakhs has been requested for 5 projects in Cleaning and Grading Processing Centres and 6 Custom Hiring Centres respectively. In case of SHGs, highest sanctions have been given to Custom Hiring Centres with 12 pre-sanctions worth INR 196 lakhs, followed by 5 pre-sanctions of Godown worth INR 158 lakhs.

TABLE 24: STATUS OF PRE-SANCTIONS GIVEN TO THE FPOS ACCORDING TO PROPOSED BUSINESS ACTIVITIES

Type of Business Activity	Number of FPOs	Amount (INR Lakh)
Cleaning & Grading, Grain Process Construction	5	255.97
Custom Hiring Centre	6	151.03
Godown	8	477.27
Flour mill	1	80.00
Soybean oil mill	1	86.00
Turmeric Powder Manufacturing	1	50.00
Silage Making	1	90.75
Sericulture	1	60.00
Total	**24**	**1251.02**

TABLE 25: STATUS OF PRE-SANCTIONS GIVEN TO THE SHGS ACCORDING TO PROPOSED BUSINESS ACTIVITIES

Type of Business Activity	Number of SHGs	Amount (INR Lakh)
Custom Hiring Centre	12	196.62
Godown	5	158.16
Feed production unit	1	24.26
Refrigerated Van (F&A)	1	20.03
Total	**19**	**399.07**

The below graph presents the status of the soil and water conservation works during the concurrent monitoring period, The number of soil and water conservation works proposed are highest in Jalna (1667), followed by Beed (1515), Latur (1312) and Aurangabad (1199). The total completed works are highest in Osmanabad (38) followed by Aurangabad (36), Hingoli (26) and Jalna (24). Technical sessions conducted are much higher in Aurangabad compared to other districts. Aurangabad had a total of 281 technical sessions, followed by 142 in Osmanabad, and 83 in Beed and Nanded. However, the number of competed works are low as also observed during the primary surveys. More focus needs to be given to ensure higher completion rate of these works.

The status if preparation of mini watershed plans and DPRs has bene presented in the below table. The below table highlights that in 99.3% of the Phase 1 villages, micro planning have been completed as well as Village Development Plans are approved. There are only 4 villages left of which two of them lie in Latur and 2 in Parbhani district.

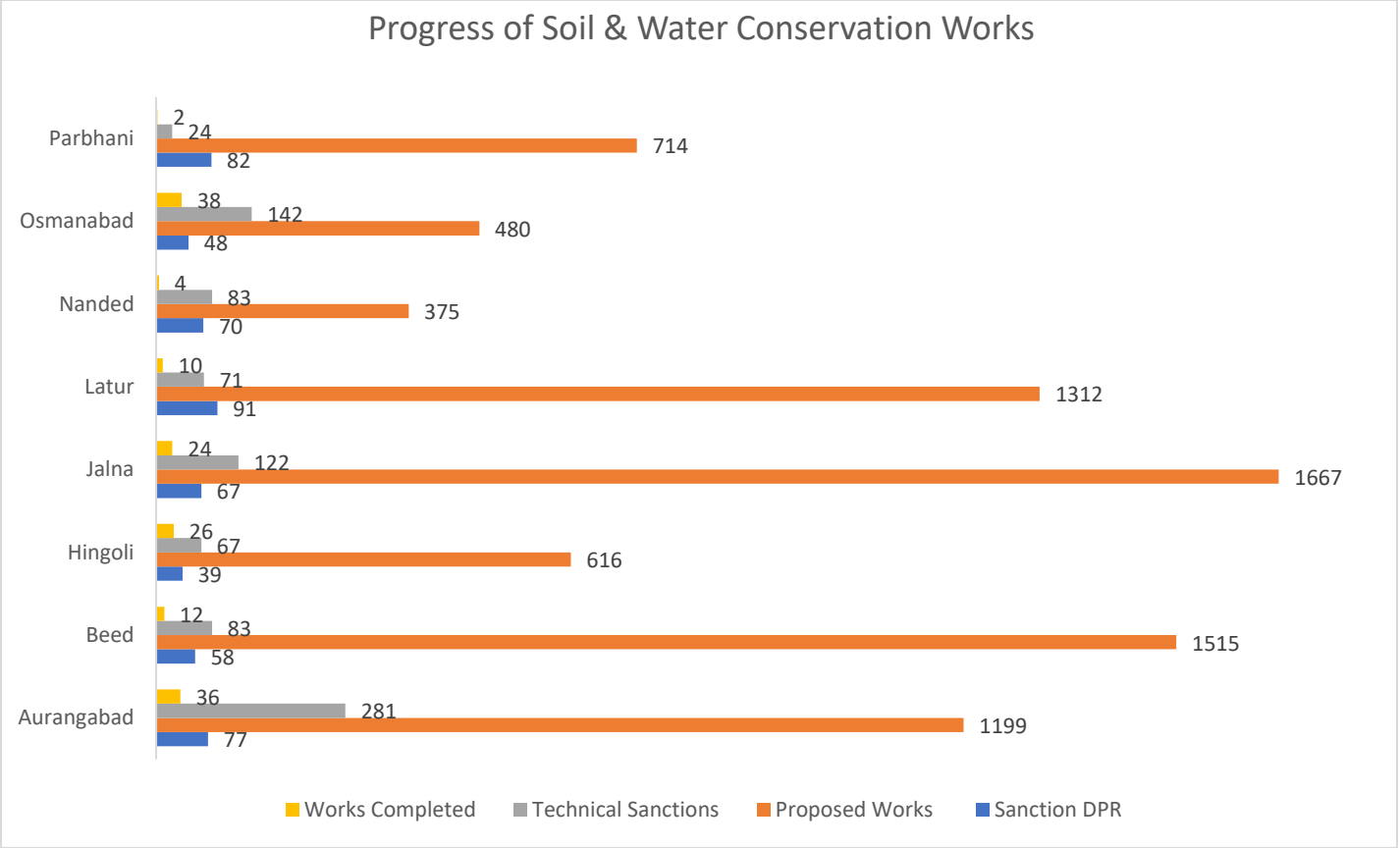


FIGURE 97:PROGRESS OF SOIL AND WATER CONSERVATION WORKS

Table 26: Status of Preparation of Mini Watershed Plans and DPRs in Phase I Villages

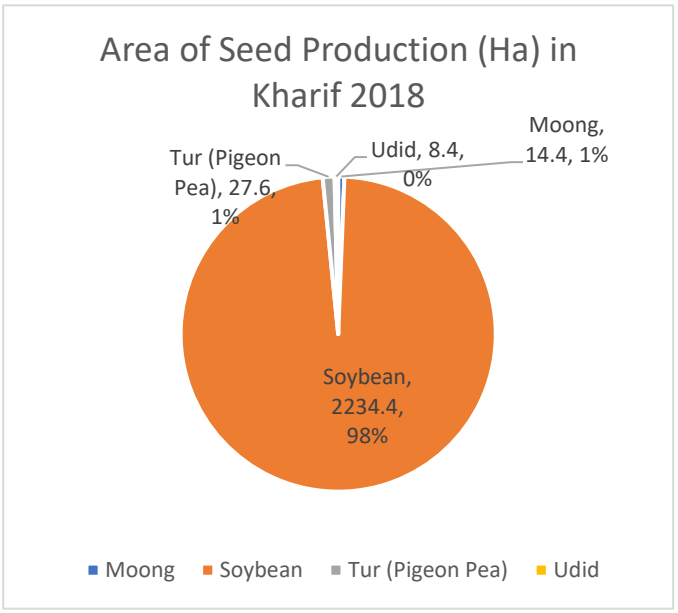
Dist.	Phase-I Villages	Phase I Clusters	Micro-Planning Completed villages	Village Development Plans Approved	Villages with Micro planning completed and VDP prepared
Aurangabad	77	12	77	77	100.0%
Beed	58	5	58	58	100.0%
Hingoli	39	5	39	39	100.0%
Jalna	67	10	67	67	100.0%
Latur	94	10	92	92	97.9%
Nanded	70	7	70	70	100.0%
Osmanabad	48	12	48	48	100.0%
Parbhani	84	9	82	82	97.6%
Total	**537**	**70**	**533**	**533**	**99.3%**

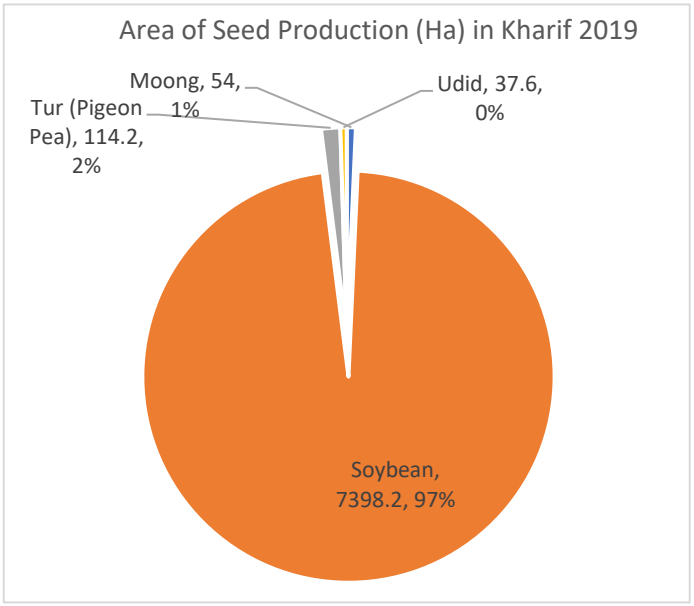
Promotion of production of climate resilient seed varieties is an important component of the PoCRA project. The table below highlights the different varieties of the seeds produced under Kharif and Rabi season in 2018 and Kharif season in 2019. The table also throws light on the number of growers and in percentage of the different crops for seed production. Soybean is the dominant crop for seed production in Kharif 2018 and 2019, comprising of 96% of the seed production in both the years. Gram is the most popular crop for seed production in the Rabi Season of 2018, comprising of 88.3% of the total production of seeds.

TABLE 27:SEED PRODUCTION OF CLIMATE RESILIENCE VARIETIES

Crop	Varieties	Number of Growers	Crop wise % growers in season
Kharif 2018			
Moong	BM-2002-1, BM-2003-2, UTKARSHA	10	1.2%
Soybean	DS-228, JS-335, JS-9305, MACS-1188, MAUS-158, MAUS-162, MAUS-71	792	96.2%
Pigeon Pea	BDN-711, BSMR-736, ICP-8863, ICPL-87119, PKV TARA, VIPULA	16	1.9%
Udid	TAU-1	5	0.6%
Total		**823**	
Rabi 2018			
Gram	DIGVIJAY, JAKI 9218, PHULE VIKHRAM, RAJVIJAY-202, RAJVIJAY-203, VIJAY, VIRAT, VISHAL	182	88.3%
Improved Rabi Sorghum	M-35-1, SPV 1411, SPV 1595	24	11.7%
Total		**206**	
Kharif 2019			
Moong	BM-2002-01, BM-2003-02, JS-335, UTKARSHA	26	0.8%
Soybean	BDN-711, BM-2002-01, DS-228, JS-20-29, JS-335, JS-93-05, KDS-344, MACS-1188, MAUS-158, MAUS-162, MAUS-612, MAUS-71, PHULE SANGAM	3320	96.1%
Pigeon Pea	BDN-711, BDN-716, BSMR-736, MAUS-158, P-12	81	2.3%
Udid	AKU-10-1, TAU-1, TAU-I	29	0.8%
Total		**3456**	

The area of seed production of different crops in Kharif and Rabi Season can be observed from the figures below.





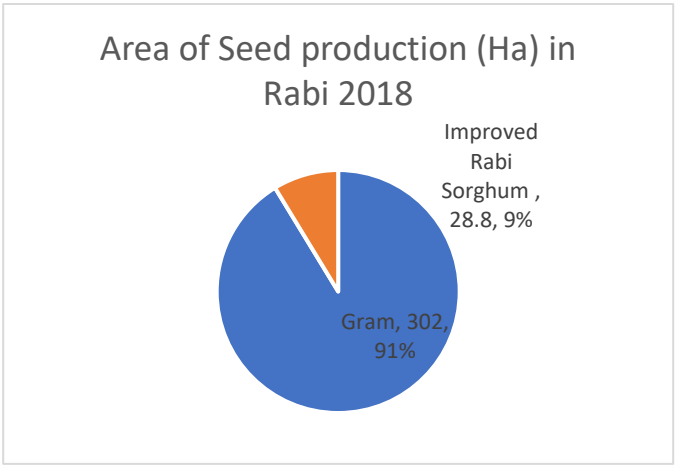


FIGURE 98: AREA OF SEED PRODUCTION (HA)

10. Summary of Physical and Financial Progress

TABLE 28: SUMMARY OF PHYSICAL AND FINANCIAL STATUS

S.No	Component, Sub- Component and Activities (Marathwada Region)	Unit	2018-19		2019-20	
			Phy	Finance INR (INR Lakhs)	Phy	Finance INR (INR Lakhs)
	COMPONENT A - Promoting Climate Resilient Agriculture Systems					
A.1	**Participatory Development of Mini Watershed Plans**					
	Micro-watershed plans	No. of mini-watershed plans developed and approved	44		533	
	VCRMCs formed (*This is a cumulative figure upto 30th September 2019. (Phase I – 452; Phase II – 1116*)	No. of VCRMCs formed			1568	
	Mobilisation and appointment of Krishi Tai (*This is a cumulative figure upto 30th September 2019*)	No. of Krushi Tai's mobilised			1294	
A.2	**Climate Smart Agriculture and Resilient Farming Systems**					
1	**Farmer Field school**	No. of FFS conducted	1361	135.9	3450	
I	Encouragement to climate resilient farming techniques					
		No. of host farmers in Kharif Season			3375	
		No. of host farmers in Rabi Season			1527	
		No. of guest farmers in Kharif Season			78359	
		No. of guest farmers in Rabi Season			32645	
1.1	**Adoption of Agro Forestry**					
1	Second year	No. of Beneficiaries			4	0.11
		Area under agro-forestry *(hectares)*			3.71	
1	Total Agroforestry	No. of Beneficiaries			4	0.11

S.No	Component, Sub- Component and Activities (Marathwada Region)	Unit	2018-19		2019-20	
		Area under agro-forestry *(hectares)*			3.71	
1.2	**Horticulture Plantation**					
1.2.1	Mango (5x5)	No. of Beneficiaries	3	1.41	15	4.87
	Mango	Area under plantations (hectares)	4.24		19.98	
1.2.2	Citrus, Kagzi Lime,Orange and Sweet Lime	No. of Beneficiaries	15	5.43	109	28.03
		Area under plantations (hectares)	18.42		125.12	
1.2.3	Custard Apple (5x5)	No. of Beneficiaries			50	12.60
		Area under plantations (hectares)			63.37	
1.2.4	Guava (3x2 – 28; 6x6 – 4)	No. of Beneficiaries	5	4.11	32	16.94
		Area under plantations (hectares)	4.9		37.93	
1.2.5	Pomegranate (4.5x3)	No. of Beneficiaries			35	11.07
		Area under plantations (hectares)			38.74	
	Horticultural Plantation	No. of Beneficiaries	23	10.95	241	73.51
		Area under plantations (hectares)	27.56		285.14	
2	**Protected cultivation**					
2.1	Shadenet house (GI/MS Pipes) (1000 Sq. M)	No. of Beneficiaries	1	7.07	5	33.40
2.5	Planting material Polyhouse/shadenet house				1	3.93
2.6	Planting material Shadenet house/Polyhouse Flower crop plantation/ Vegetable plantation	No. of Beneficiaries			4	27.80
2.7	Planting material Poly Tunnel for Flower crop plantation/ Vegetable plantation	No. of Beneficiaries			1	1.40
	Total Protected Cultivation	No. of Beneficiaries	1	7.07	11	66.53
3	**Integrated Farming System**					
3.1	Small ruminants/goat farming	No. of Beneficiaries	78	30.19	248	92.10

S.No	Component, Sub- Component and Activities (Marathwada Region)	Unit	2018-19		2019-20	
3.2	Backyard poultry	No. of Beneficiaries				
3.3	Sericulture	No. of Beneficiaries			15	1.89
3.4	Apiculture	No. of Beneficiaries				
3.5	Inland Fisheries	No. of Beneficiaries				
3.6	Other Agro Based Activities	No. of Beneficiaries				
	Total Integrated Farming System	No. of Beneficiaries	78	30.19	263	93.99
4	**Soil health Enhancement**					
4.1	Production of organic inputs through NADEP and Vemi Compost	No. of Beneficiaries			4	0.20
4.2	Organic fertilizer Production unit	No. of Beneficiaries			1	0.03
	Total Soil health Enhancement	No. of Beneficiaries			5	0.23
A.3	**Promoting an efficient and sustainable use of water for Agriculture**					
1	**Area Treatment**					
1.1	Continuous Contour trenches Model 5-8 (0.30 m)	Survey No.				
1.2	Continuous Contour trenches Model 5-8 (0.45 m)	Survey No.	105	5.60		
1.3	Deep Continuous Contour trenches (CCT)	Survey No.				
	Progress of soil and water conservation works	No. of works completed			152	254.72
2	**Drainage Line Treatment**					
2.1	Construction of Loose bolder Structures	Number				
2.2	Gabian Structure	Number				
2.3	Construction of Earthen Nala Bunds	Number	6	16.40		
2.4	Construction of Cement Nala Bunds	Number				
3	**Construction of new water harvesting structures**					
3.1	Community farm ponds				364	910.15
3.2	Individual Farm pond with lining		44	32.46	212	135.04
3.3	Individual farm pond without lining		4	2.87	8	3.63
3.4	Farm Pond lining		16	10.84	183	124.11

S.No	Component, Sub- Component and Activities (Marathwada Region)	Unit	2018-19		2019-20	
3.5	Construction of farm pond with inlet & outlet (Black Soil)		0	0.00	3	1.45
3.6	Construction of farm ponds without inlet and outlet (Black Soil)		0	0.00	18	8.54
3.7	Farm pond with inlet and outlet and grass cultivation				1	0.17
3.8	Construction of open dug well				32	57.54
4	**Rejuvenation or desilting of existing water harvesting Structure**	Number			3	0.32
5	**Groundwater Recharge**					
5.1	Well Recharge	Number			5	0.53
	Total Promoting an efficient and sustainable use of water for Agriculture		175	68.17	981	1496.2
6	**In-situ Water Conservation**					
6.1	Compartment Bunding/Graded Bunding	Survey Number	546	20.6		
7	**Micro irrigation System**					
7.1	Drip Irrigation	No. of Beneficiaries	4	0.98	425	204.64
7.2	Sprinkler irrigation	No. of Beneficiaries	56	7.35	553	80.86
	Total Micro Irrigation System	No. of Beneficiaries	60	8.33	978	285.50
8	**Protected Irrigation System**					
8.1	Water lifting Devices (Pump set)	No. of Beneficiaries	88	8.72	1626	169.64
8.2	Pipe (HDPE/PVC)	No. of Beneficiaries	208	28.87	2823	392.56
	Total Protected Irrigation System	No. of Beneficiaries	296	37.59	4449	562.20
	COMPONENT B: Post-Harvest Management and strengthening of climate resilient value chain					
	Status of Application	No. of proposals submitted			113	4190.45
		No. of proposals Approved by bank			12	344.23
1	**Creation of basic infrastructure facilities**					
1.1	SHG/FIG - Proposal	No.	1	0		
1.2	FPC/FPO- Proposal	No.				
	Total Creation of basic infrastructure facilities	No.	1	0		

S.No	Component, Sub- Component and Activities (Marathwada Region)	Unit	2018-19		2019-20	
2	**Custom Hiring Center - Facilitation and Production**		2	0		
2.1	SHG/FIG - Proposal	No.				
2.2	FPC/FPO- Proposal	No.				
	Total Custom Hiring Centre - Facilitation and Production	No.	2	0		
3	**Production of foundation & certified seeds of climate resilient varieties**	No. of Growers			4568	
		Area under seed production (Ha)			10176	
4	**Seed Hub- Development of basic Infrastructure Facilities**					
4.1	SHG/FIG - Proposal	No.				
4.2	FPC/FPO- Proposal	No.	1	0		
	Total seed Hub- Development of basic Infrastructure Facilities	No.	1	0		
	COMPONENT C – Institutional Development, Knowledge and Policies for a Climate resilient Agriculture					
1	Capacity Enhancement and Need Assessment of stakeholders including FPOs, VCRMC.	No. of trainings conducted			652	
		No. of total participants in training- Male			4329	
		No. of total participants in training- Female			5020	
		No. of workshops conducted			231	
		No. of total participants in workshops- Male			792	
		No. of total participants in workshops- Female			799	
3	Exposure Visits	No. of exposure visits conducted			1	
		No. of total participants- Male			6	
		No. of total participants- Female			5	
		No. of apps updated to new technologies and needs				