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DVARA
E-Registry

Enriching Agriculture, Enriching Lives

- Assessing the Impact of Dvara E-Registry's FPO-led Farmer Empowerment

Commissioned by Dvara E-Registry

Dvara E-Registry is a portfolio company of
Dvara Holdings and part of the Dvara Venture Studio

Authored by
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Manager - Impact, Dvara E-Registry

“
....with current
presence across
12 states
and over
200 FPOs...
”



Dvara E-Registry is an agri fintech startup based out of Hyderabad. It aims to be a financial inclusion and productivity enabling platform for the stakeholders across the agri value chain by providing farm level analytics and actionable insights by harnessing the transformative powers of artificial intelligence, remote sensing and other emerging technologies at scale. Hence, it offers multiple solutions such as digital platform, backward and forward market linkages, financial linkages etc. to the stakeholders in agri value chain, primarily working with the Farmer Producer Organisations (FPOs) to create a positive impact at the smallholder farmer level.

Dvara E-Registry has developed 'Doordrishti', a comprehensive digital platform for the agriculture sector is a combination of web interface for the FPO and mobile applications for the farmers and field representatives, to provide access to a range of services. Operational since 2019, and with current presence across 12 states and over 200 FPOs, we at Dvara E-Registry went back to our core partners/customers – the FPOs and Farmers to take stock of what is working for them and what is not. This is an opportunity to take feedback from the ground, through the experience of farmers who are using offerings of Doordrishti platform on a regular basis.

To understand Dvara's penetration and impact, this impact study was conducted across 25 FPOs from Maharashtra, Madhya Pradesh, Rajasthan, Odisha, and Manipur. This impact report details findings from each of Dvara E-Registry's focussed services and ultimate goal of increasing the productivity of farmers and FPOs. Findings through this study help Dvara understand the impact of on field products and services and allow us to innovate newer services that are more effective.

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LIST OF ABBREVIATIONS

AI	Artificial Intelligence
APMC	Agricultural Produce Market Committee
BoD	Board of Director
CBBO	Cluster Based Business Organization
CEO	Chief Executive Officer
DER	Dvara E-Registry
FPO	Farmer Producer Organisation
FR	Field Representative
GIS	Geographic Information System
ML	Machine Learning
NABARD	National Bank for Agriculture and Rural Development
NAFED	National Agricultural Cooperative Marketing Federation of India Ltd
NCDC	National Cooperative Development Corporation
NCDEX	National Commodity and Derivatives Exchange Limited
SFAC	Small Farmers' Agribusiness Consortium





PROLOGUE

Dvara E-Registry (DER) is an agrifintech start-up incubated by the Dvara Venture Studio. The organisation is based out of Hyderabad. Dvara E-Registry was formed in the year 2019. DER works with Farmer Producer Organizations (FPOs) and the farmers through bouquet of services at every stage of FPO development, designed for the FPOs to make them efficacious and sustainable.

DER employs technology, partnerships across the value chain and continuous handholding support to offer solutions to both farmers and FPOs. Through the technological interventions and harnessing the transformative power of Remote Sensing, GIS, AI, ML, etc., we provide farm level analytics and actionable insights to the FPOs and farmers.

The organisation aims to bring following transformations for the small and marginal farmers:



DER, through Dvara Holdings, is empaneled as Cluster Based Business Organization (CBBO) with NABARD, SFAC, NCDC and NAFED for formation and handholding of FPOs. Dvara has been allotted 50 FPOs to be formed in Maharashtra, Rajasthan, Madhya Pradesh, Manipur, and Odisha. We will be working with these 50 FPOs for a period of 5 years starting from 2021-22 and supporting all their business activities and market linkages. Additionally, DER has also partnered with 160+ FPOs in 12 states, with over 55,000-member farmer base. As a partner, we assist these FPOs in business activities and market linkages, enabled with the digital platform Doordrishti.

“

Dvara has been allotted 50 FPOs to be formed in Maharashtra, Rajasthan, Madhya Pradesh, Manipur, and Odisha.

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Central Sector Scheme: Formation and Promotion of 10,000 New Farmer Producer Organizations (FPOs) - Doubling Farmer's Income and Fostering Agricultural Prosperity.

Doubling of Farmer's Income (DFI) has been one of the key areas of focus of the Government of India. To serve the objective and to identify issues as well as recommend possible solutions for DFI, GoI constituted an Inter-ministerial committee in April 2016. The report submitted by committee members in 2018 emphasised on the 7 sources of income for the farmers:

- Increase in crop productivity
- Increase in livestock productivity

- Resources use efficiency – reduction in cost of production
- Increase in cropping intensity
- Diversification to high value agriculture
- Remunerative process on farmer's produce
- Shift of surplus manpower from farmer to non-farm occupations.

In line with the objective of Doubling Farmer's Income, the Government of India has rolled out various schemes. While the schemes were all centred around benefitting smallholder farmers, one of the key highlights was emphasis of collectivisation of the smallholder farmers.

The Government of India recognizes that by forming FPOs, farmers can collectively enhance their economic strength and improve their access to markets. FPOs provide a platform for farmers to join forces, pool their resources, and collectively negotiate better prices for their produce. By bringing farmers together, FPOs create economies of scale, enabling farmers to access better technology, quality inputs, and credit facilities that would otherwise be challenging for individual farmers to obtain. This concerted effort also facilitates improved production practices, leading to better quality commodities and increased market competitiveness.

Collectivisation under Farmer Producer Organisations or Cooperative Societies is not a new concept, however, the GoI, through the current design of Central Sector Scheme for Formation and Promotion of 10,000 new FPOs, that was announced in 2020, has reignited the hopes of millions of smallholder farmers. The scheme has been designed to aggregate small, marginal, and landless farmers into FPOs, which has strengthened their economic position and establish crucial market linkages to enhance their income.

The new scheme has been launched with an aim to form and promote 10,000 new FPOs across the country. To ensure the success of this initiative, the government has allocated a budgetary provision of Rs 6,865 crore. This financial commitment demonstrates the government's dedication to empowering farmers and transforming the agricultural sector. The scheme's clear strategy and committed resources enables the formation of FPOs and provide the necessary support for their growth and development.

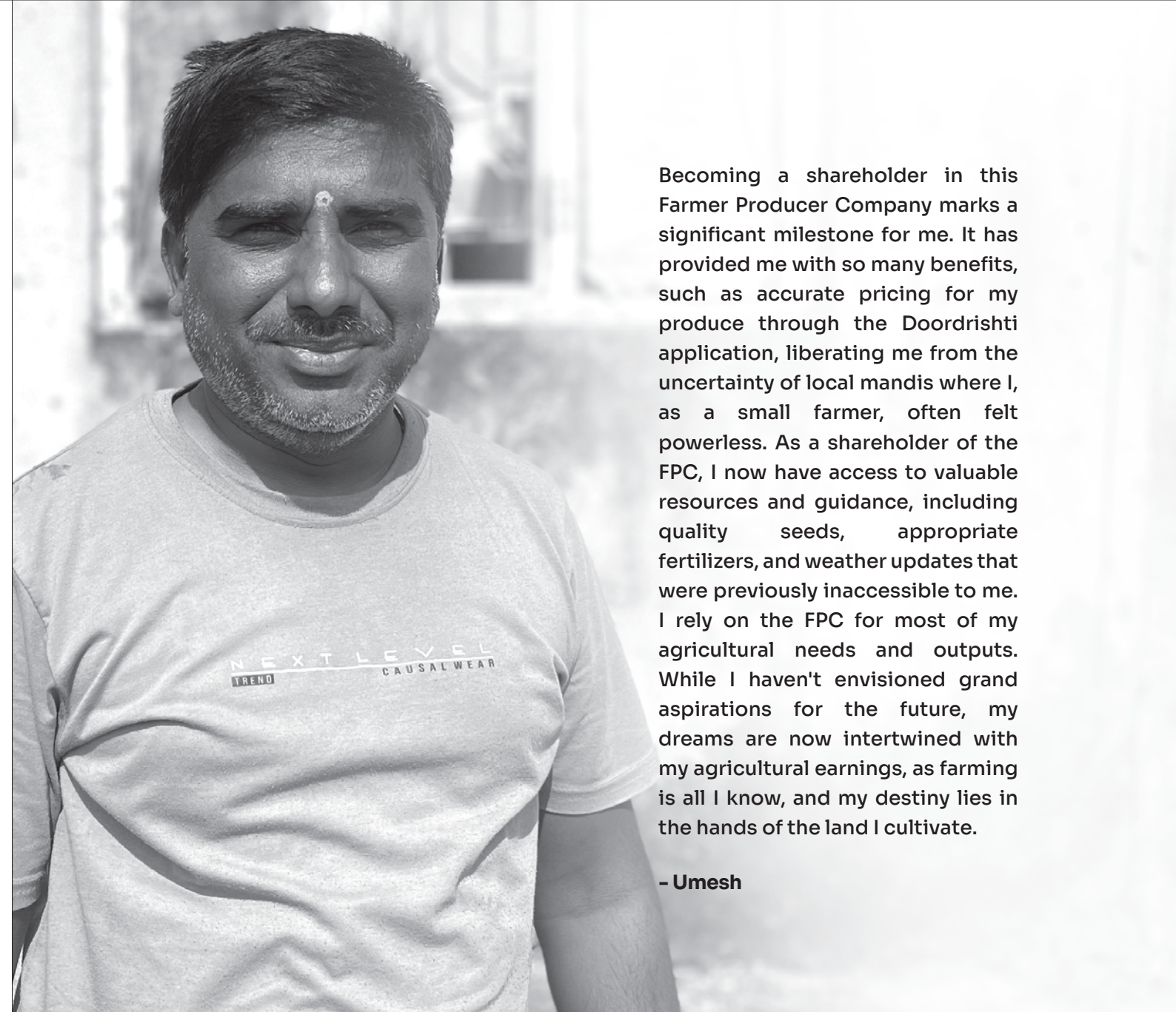
This scheme is further complemented by the Schemes such as Equity Grant Scheme, Credit Guarantee Fund, Agri Infrastructure Fund (AIF) etc. The Central Sector Scheme

“Collectivisation under Farmer Producer Organisations or Cooperative Societies is not a new concept, however, the GoI, through the current design of Central Sector Scheme for Formation and Promotion of 10,000 new FPOs has reignited the hopes of millions of smallholder farmers.”

on FPOs has set the stage for future agricultural prosperity. By nurturing FPOs, the scheme encourages the formation of strong farmer collectives that are self-sustaining, innovative, and adaptive to emerging challenges. The scheme's focus on technology adoption, capacity building, and market integration equips farmers with the necessary skills and resources to thrive in the evolving agricultural landscape.

Under the CSS for Formation and Promotion of 10,000 New FPOs, Dvara Trust is empanelled as Cluster Based Business Organisation (CBBO) with all 4 national Implementation Agencies (IA), viz., SFAC, NABARD, NCDRC and NAFED. 50 FPOs have been allocated to Dvara Trust spread in five states, Rajasthan, Madhya Pradesh, Maharashtra, Manipur and Odisha. Dvara E-Registry, as an incubate of Dvara Trust, partnered with Dvara Trust to offer Digital platform for market and financial linkages to these FPOs.

To gauge the impact of interventions at the farmer level, Dvara conducted a detailed study in the month of October 2022. The study was conducted with 25 FPOs that are formed under the CSS and were atleast 6 months old. These FPOs are spread across all the 5 states mentioned above. 1,498 farmers were interviewed under the study. The study results highlight the significance of the CSS for formation of FPOs and brining farmers together thus helping them in reducing their cost of cultivation, increased farmer income through better price realisation and increased access to technology.



Becoming a shareholder in this Farmer Producer Company marks a significant milestone for me. It has provided me with so many benefits, such as accurate pricing for my produce through the Doordrishti application, liberating me from the uncertainty of local mandis where I, as a small farmer, often felt powerless. As a shareholder of the FPC, I now have access to valuable resources and guidance, including quality seeds, appropriate fertilizers, and weather updates that were previously inaccessible to me. I rely on the FPC for most of my agricultural needs and outputs. While I haven't envisioned grand aspirations for the future, my dreams are now intertwined with my agricultural earnings, as farming is all I know, and my destiny lies in the hands of the land I cultivate.

- Umesh



“As an FPC shareholder, I have access to valuable resources, guidance, and services for my agricultural requirements, allowing me to rely on the FPC for my farming needs and outputs”

”



STUDY BACKGROUND

DER is working with 25 FPOs in the states of Maharashtra, Madhya Pradesh, Rajasthan, Odisha, and Manipur since 2021. The interventions were severely impacted by the various waves of COVID pandemic. Post the Omicron wave in January 2022, the intervention started picking steam in all the five states.

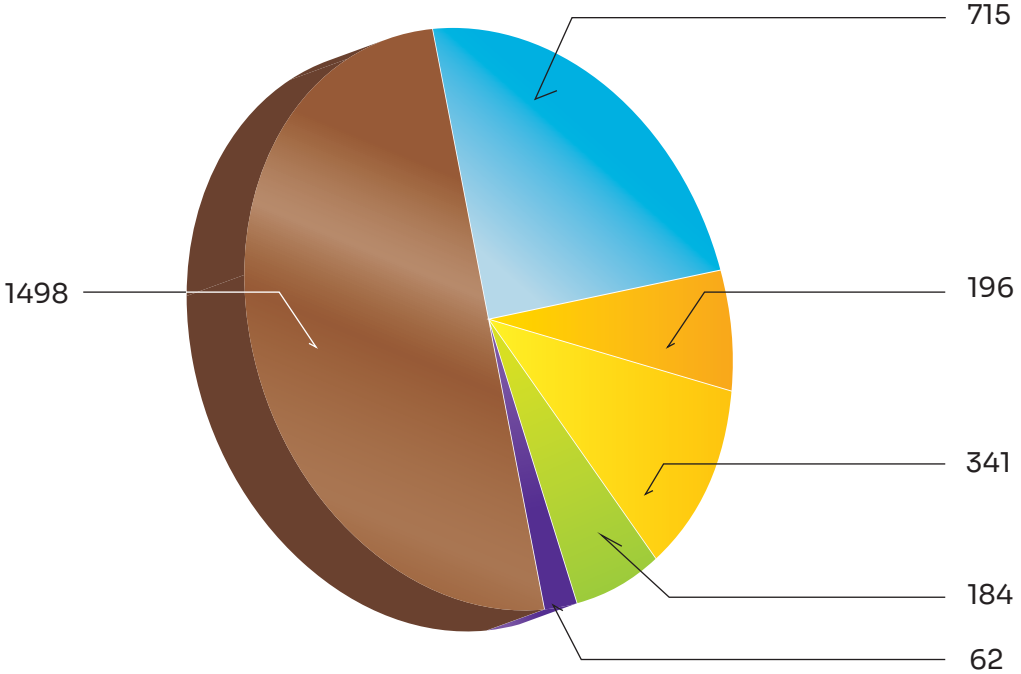
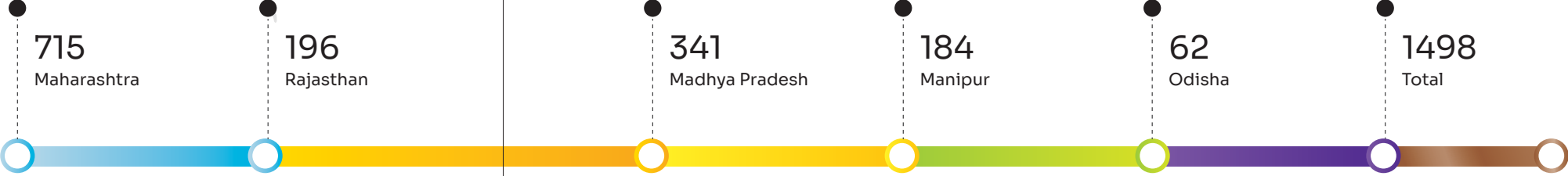
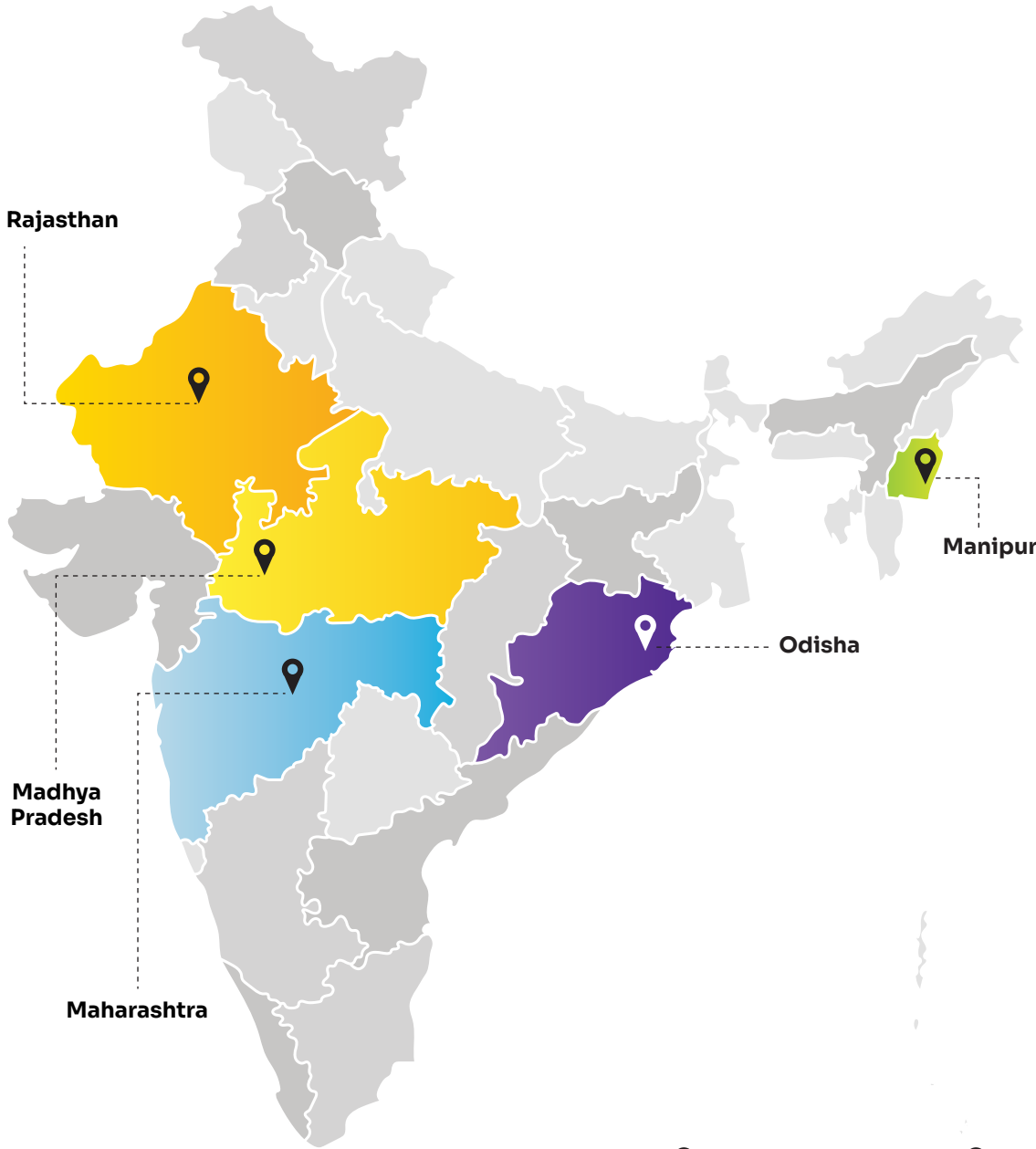
This impact assessment survey was commissioned internally by Dvara E-Registry in October 2022 to understand the impact of its intervention in 25 Farmer Producer companies with vintage of 6 months to 1.5 years under the above mentioned 5 states. The survey was conducted with a total of 1498 farmers who availed any kind of service/s through FPOs. The survey was conducted by the field representatives of Dvara E-Registry using Kobo Collect Survey mobile application.

The study comprises of following sections:

Section	Description
FPO Operations	This section talks about farmers' recall on being a shareholder of an FPO followed by benefits of various services availed from FPO such as backward and forward market linkages, soil testing, trainings and capacity building.
Usage of Doordrishti Krishak Application and orientation through Field Representatives (FR)	This section covers the various advisories and their benefits that farmers are receiving via Doordrishti Krishak Mobile Application and through the FRs. These advisories include information on current APMC and Futures prices, Agro advisories and weather forecast.
Financial Linkage	This section talks about the credit and insurance products that DER is providing to shareholder farmers through its association with various financial institutions. Farmers talk about the various benefits they are receiving through the financial services.
Farmer's overall experience with FPOs	In this section, farmers across geographies express views on their experiences with respective FPOs.



GEOGRAPHY AND SAMPLE COVERED

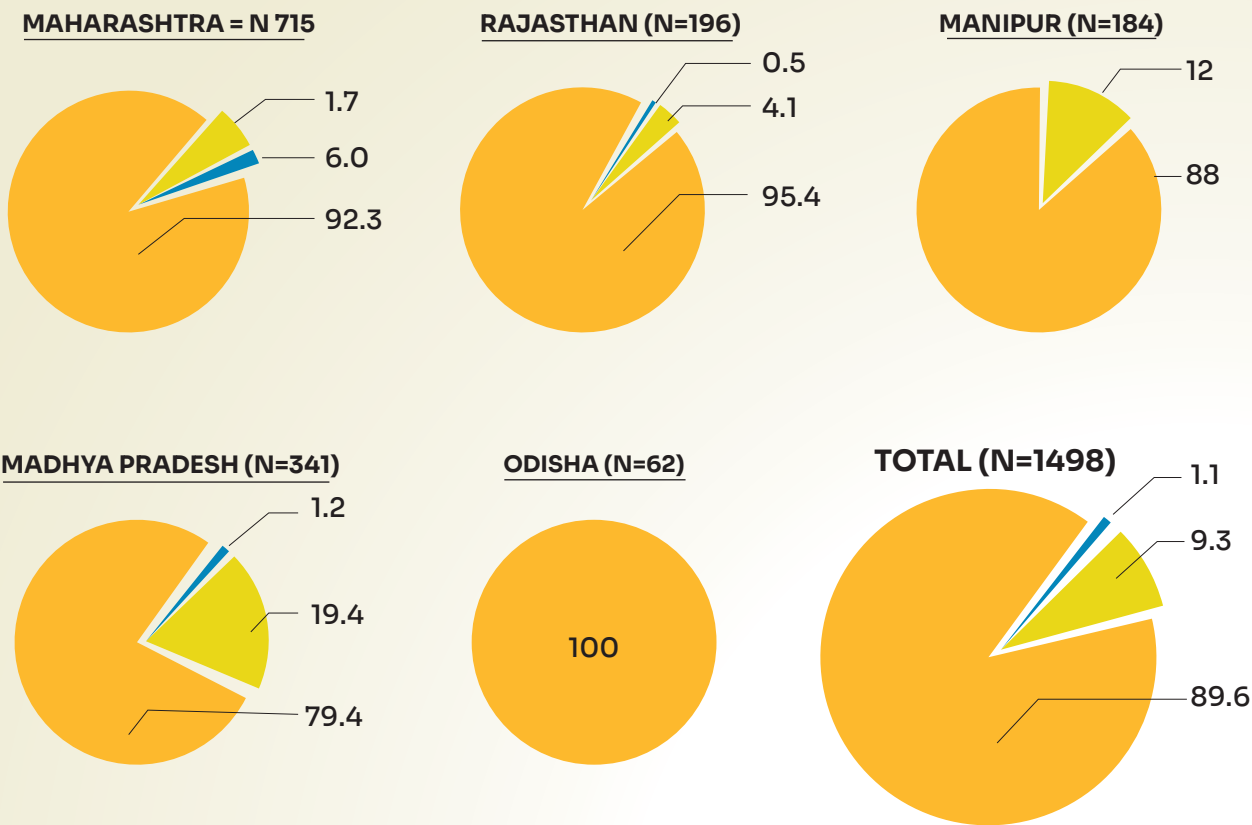


To assess the impact of the work done, efforts were made to interview those farmers who have taken some or any of the services from their respective FPO. There are a total of 7,350 shareholder farmers in the 25 FPOs that are promoted by Dvara and of these 7,350 shareholder, we considered 1,500 farmers, i.e. 20% of the total shareholder farmers for the survey. The survey enumerators were able to reach out and complete a total of 1498 surveys which is 94% of coverage.

FPO OPERATION

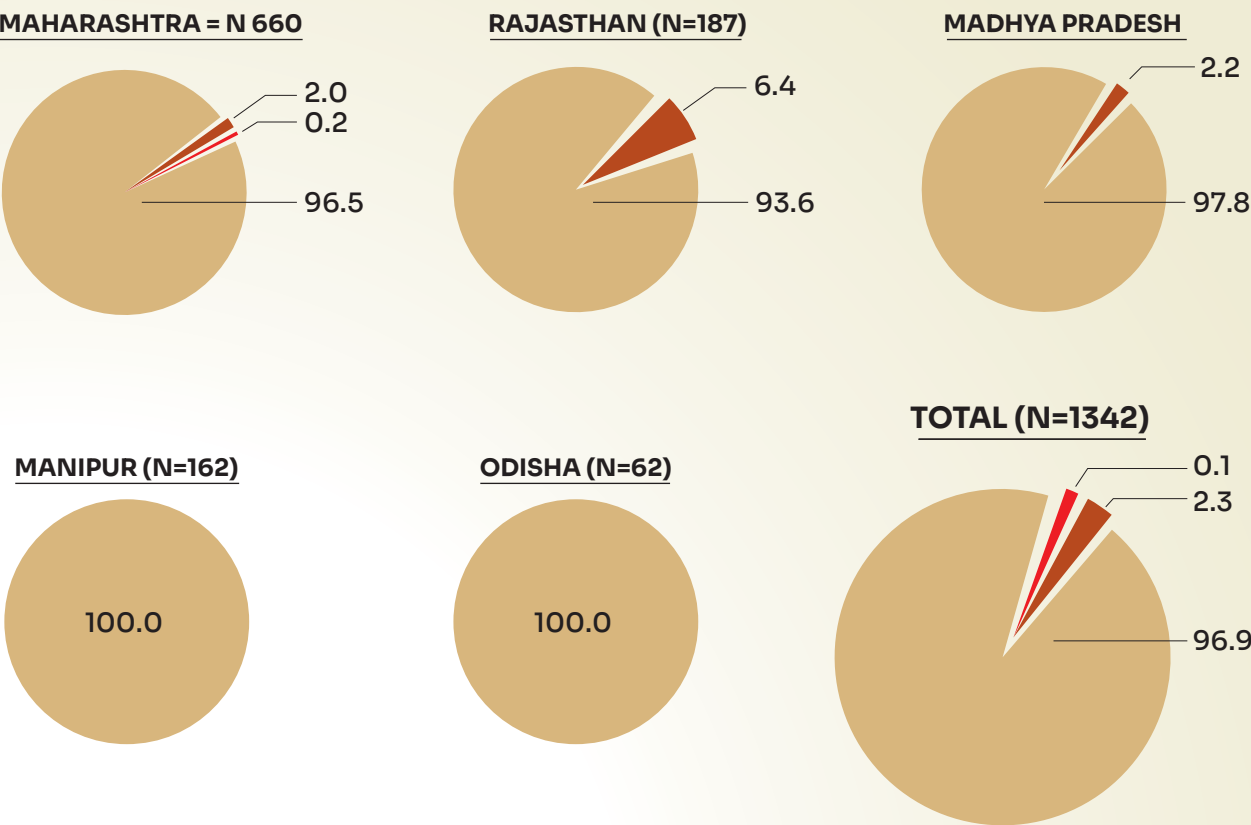
1.1 FARMER RECALL ON BEING SHAREHOLDER IN THE FPO

One of the foremost objectives of this intervention is to help farmers understand the concept and utility of Farmer Producer Organisations. In the initial meetings with farmers and village leaders, an introduction to FPOs was provided; along with helping them understand how a collective would enhance the farming ecosystem over a period. The pie chart depicts that 89.6 percent farmers are able to recall that they are affiliated with an FPO. During the qualitative discussions, farmers expressed that they are motivated by field representatives, organisation CEO and Board of Directors (BoDs) to attend the meetings and trainings. They also added that after becoming the shareholders and after attending various meetings they are gradually understanding the utility of the FPOs. Accessing quality agri inputs on time along with the access to agri credit is one of the major pulls for majority of these farmers.



1.2 RECOLLECTION OF THE FPO NAME

As mentioned above, a total of 89.6 percent farmers were able to recall being shareholder in FPOs. Farmers who were able to recall the FPO association were asked whether they could recall the name of their FPO. Apart from Odisha, all the FPOs from other four states have been formed in 2021. An overwhelming 96.9 percent were able to recall the correct names of their respective FPOs. This question was asked in order to understand a sense of connect that shareholder farmers have with their FPOs.

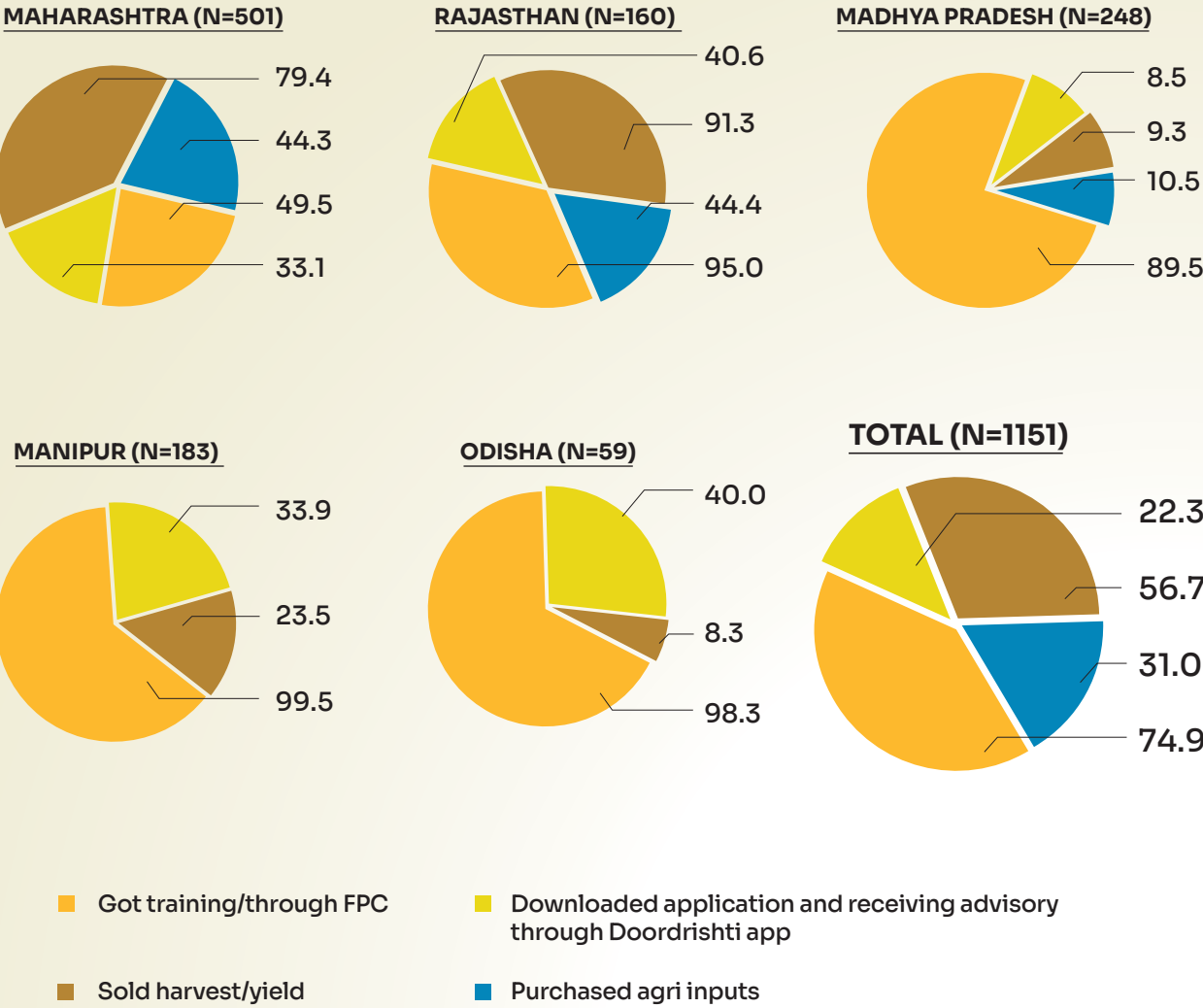


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1.3 SERVICES RECEIVED THROUGH FPO

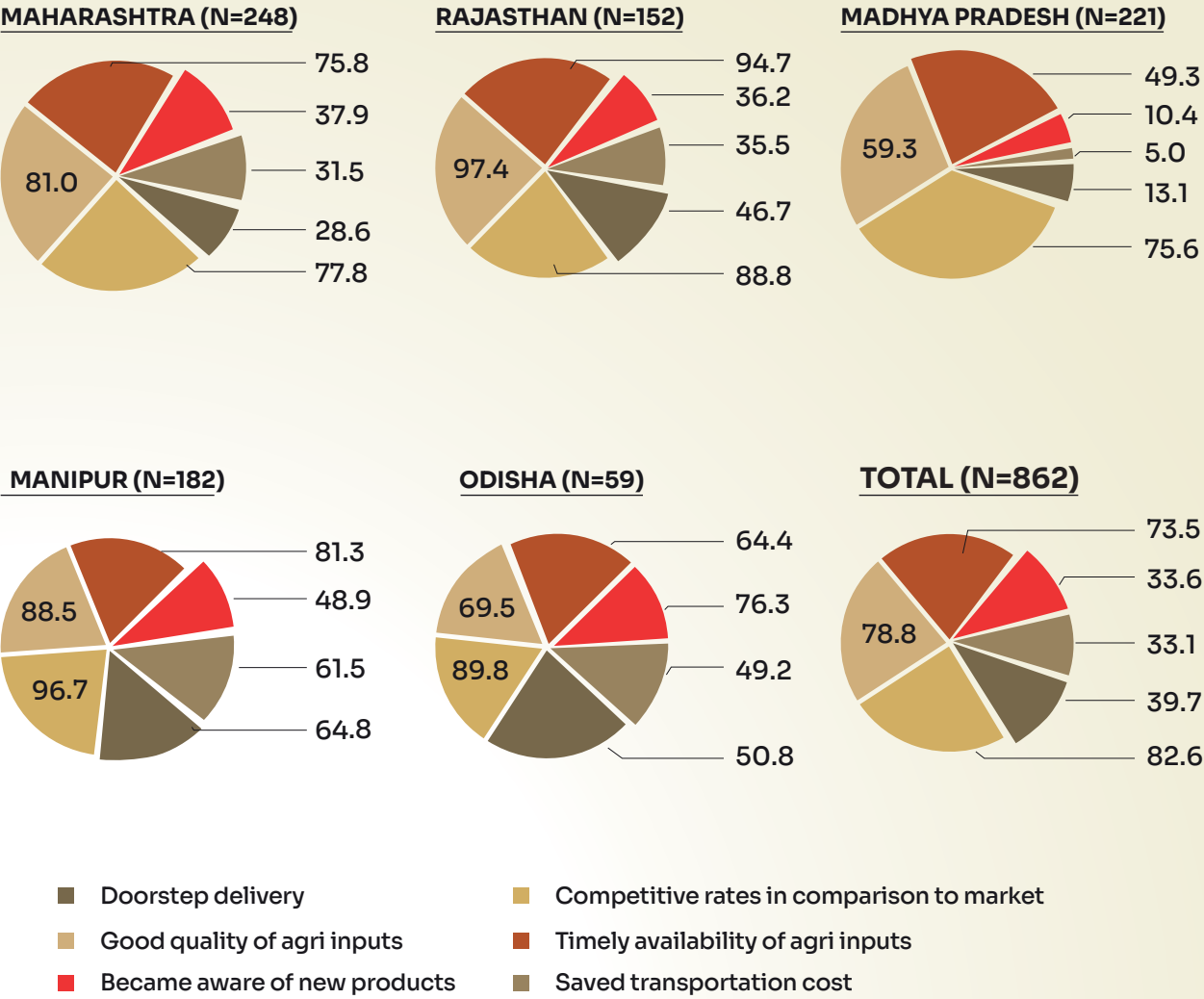
The basic premise of an FPO is to provide a range of products and services to the farmers. This includes capacity building of shareholders, availability of backward and forward market linkages and provision of weather and agro advisories periodically. DER has conceptualised a solution that enables FPOs to be one stop destination for all of farmers' needs. The study tries to examine whether farmers affiliated with DER supported FPOs are getting the services, and more importantly, what benefits they are getting out of these services.

Out of the 1498 farmers who were surveyed, 76.8 percent farmers (1151 farmers) were able to recall that they are receiving various services through their FPOs. Majority of the farmers across five states said that they have purchased agri inputs from FPOs followed by 56.7 percent who reported downloading Doordrishti Krishak application for the farmers and receiving agro advisories, weather forecast and other services.



1.4 BENEFITS OF PURCHASING AGRI INPUTS FROM THE FPO

Through partnerships with manufacturers and suppliers of agri inputs, DER connects the FPOs to engage in pricing negotiations for agricultural inputs. To obtain the best prices, aggregated demand for agricultural inputs is shared with agricultural input suppliers. The availability of assured-quality inputs at affordable prices is a problem that is resolved when FPOs and farmers have timely access to them. As per the survey, out of 1498 farmers surveyed, 57.5 percent farmers had bought agricultural inputs from their respective FPOs. The pie-chart here demonstrates that farmers are receiving multiple benefits. Most farmers think FPO offers products at competitive prices than other markets while also offering assured-quality inputs. Timely availability of agri inputs is one of the main advantages, according to 73.5 percent of farmers.

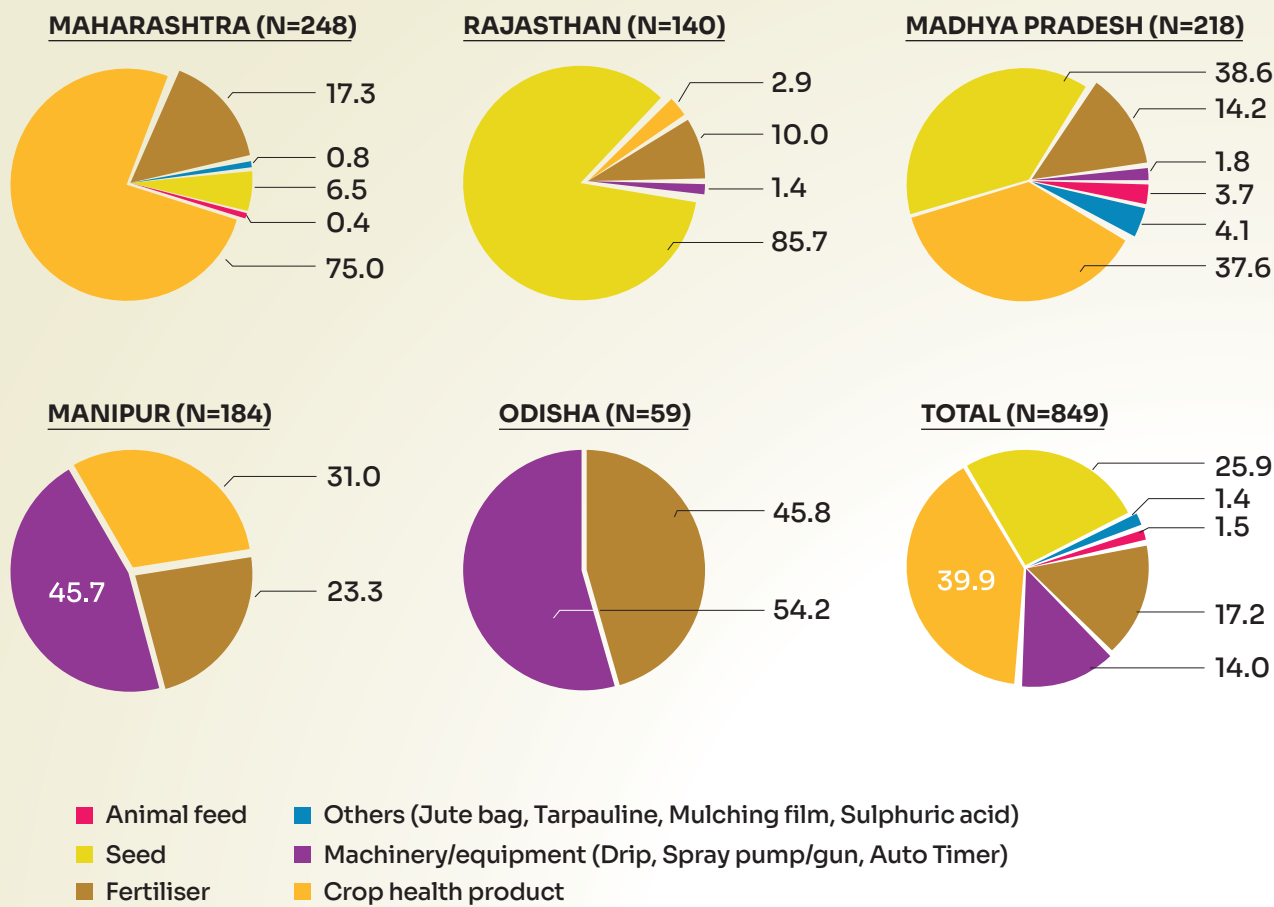


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1.5 CATEGORY OF AGRI INPUTS PURCHASED

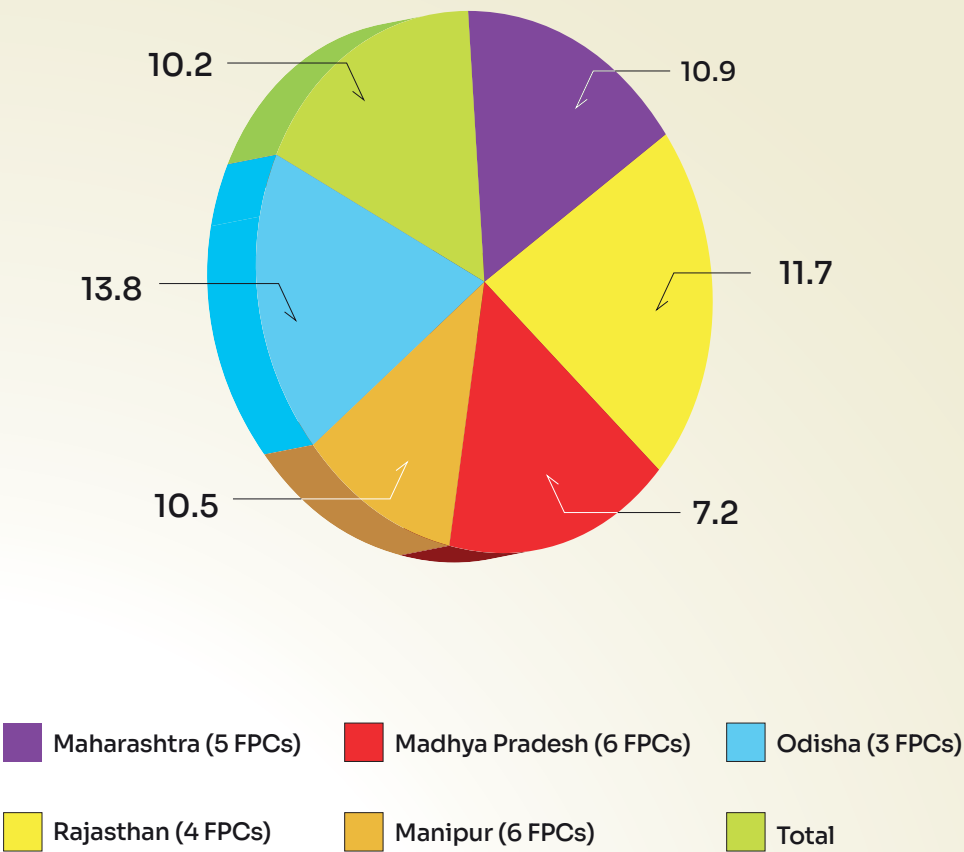
DER through its association with various enterprises helps in providing assured quality agri inputs to farmers on competitive cost.

Out of 862 farmers who have expressed benefits of purchasing agri inputs from their respective FPOs, 98.5 percent farmers talked about categories of agri inputs that they have purchased. Crop health products like Fungicide, Weedicide and Insecticide were the major inputs purchased by farmers followed by seeds. In Dholpur, Rajasthan, 85.7 percent of member farmers have purchased seeds from their respective FPOs. It is important to note that availability of agri inputs especially agricultural equipments have always been scarce in states like Manipur. Through the efforts of DER, farmers are now getting these equipments through FPO and on reasonable rates. A total of 45.7 percent shareholders has purchased machinery/equipment in the North-eastern state of Manipur which is a testimony to the fact that farmers after becoming shareholders in 7 FPOs in Manipur are benefiting through agri input purchase.



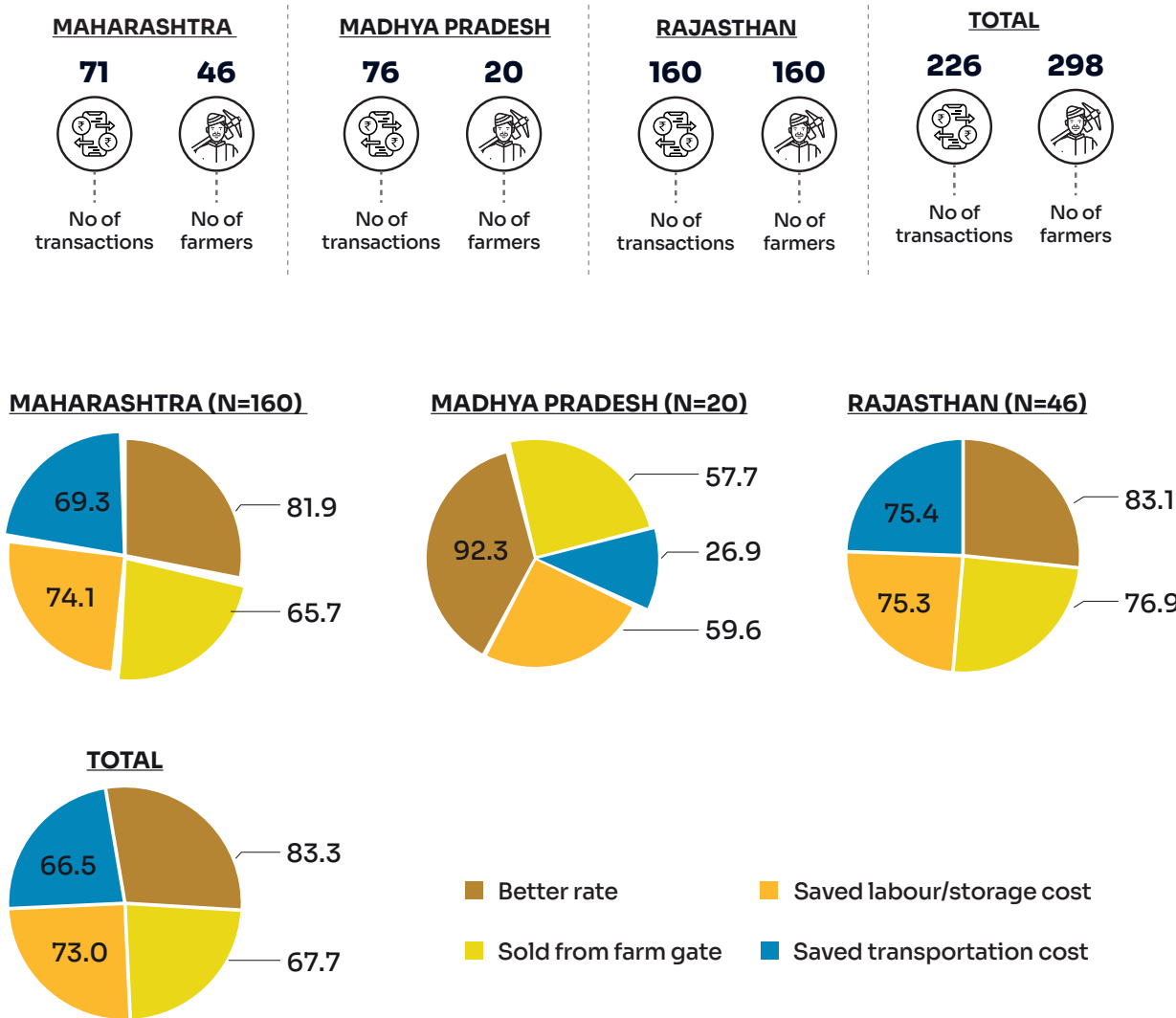
1.6 REDUCTION IN COST THROUGH THE PURCHASE OF AGRI INPUT

Efforts were made to analyse whether the shareholder farmers were benefitted in the process of purchasing agri inputs through their respective FPOs. Various categories of these inputs like crop health products, seeds, fertilisers, machineries, and other products were categorised and comparisons were drawn with market prices of the same in the respective geographies. Through the means of comparative analysis, it was found that, on an average, farmers through the aggregation model have made a profit of around 10 percent through purchasing inputs from respective FPOs.



1.7 FARMERS SELLING AGRI PRODUCE THROUGH FPOs AND BENEFITS

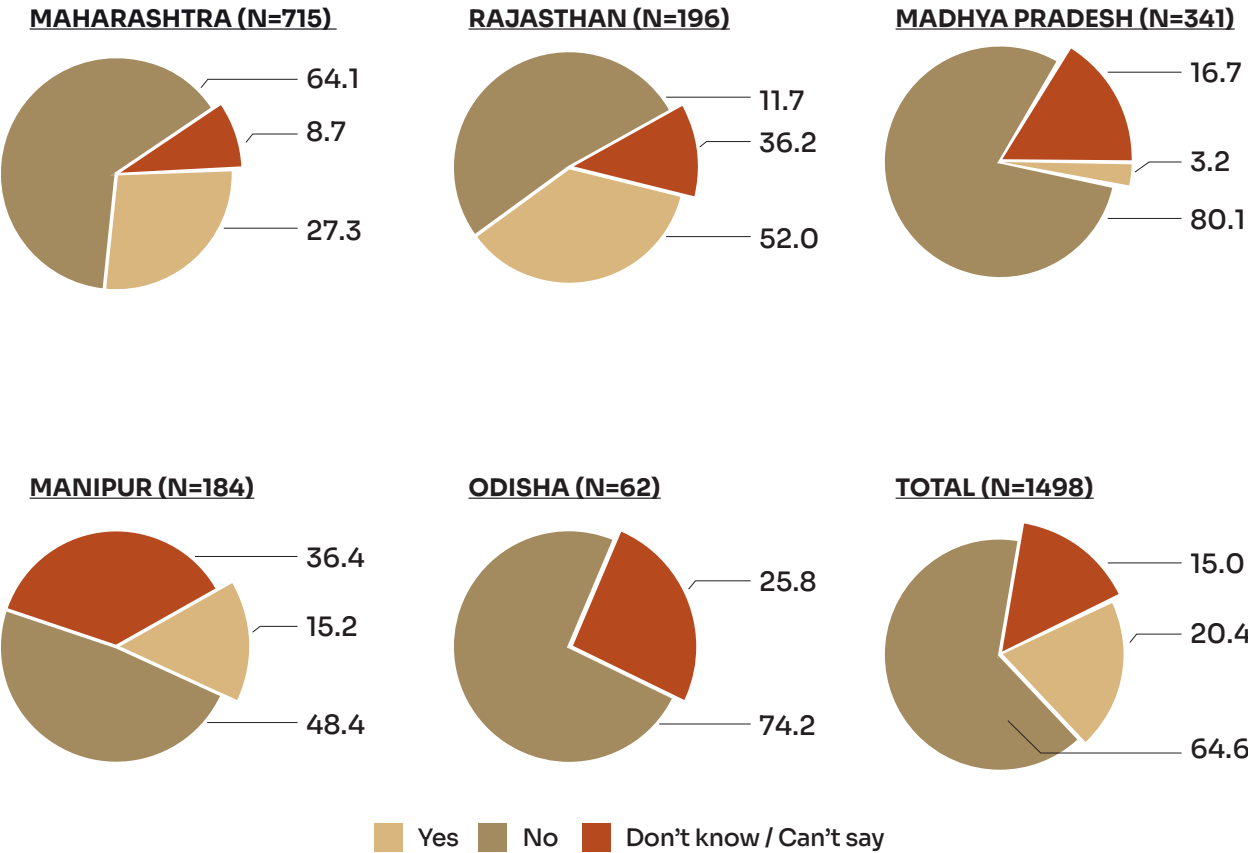
DER assists FPOs in connecting with the companies which are into purchase of agri produce. The farmer realisation increases through direct connect with companies and reduction of intermediaries. By onboarding FPOs on online trading platforms, and assisting in trade execution, DER helps in increasing the buyer base and reducing price asymmetry. 15.1 percent farmers (226 farmers) reported selling output to their respective FPOs across five locations. Around 80 percent of the farmers expressed that they got competitive rates through the FPO in comparison to other markets. Remaining farmers expressed different benefits as depicted in the pie-chart below. In addition, 428 farmers have sold agri produce through centres allotted by NAFED to Dvara FPOs such as Mahatma Phule and Lok Unnati FPO in Maharashtra.



1.8 SOIL TESTING AND ITS BENEFITS

Soil Testing is the procedure used to chemically remove elements like phosphorus, potassium, calcium, magnesium, sodium, sulphur, manganese, copper, and zinc from the soil and determine quantity of each element in the soil sample. This is a crucial diagnostic tool for identifying soil nutrients. DER initiated soil testing for member FPOs in April 2022 and it has since become an important component of DER's intervention. DER is working with a hypothesis that "Healthy soil is the foundation of healthy crops and healthy farm." Soil Testing helps in assessing the fertility and nutrient status of soil for providing an index of nutrient the availability or supply in given soil. It is a farm management tool that leads to informed decisions on fertiliser application with a potential benefit to the farmer of enhanced yields and reduced operating costs. Other benefits of soil testing include improved crop productivity and quality and higher tolerance to disease and pest attack. Soil testing involves collecting soil samples, preparation for analysis, chemical analysis, interpretation of analysis results, and finally making recommendations on fertilisers and micronutrients.

SOIL TESTING DONE THROUGH FPO

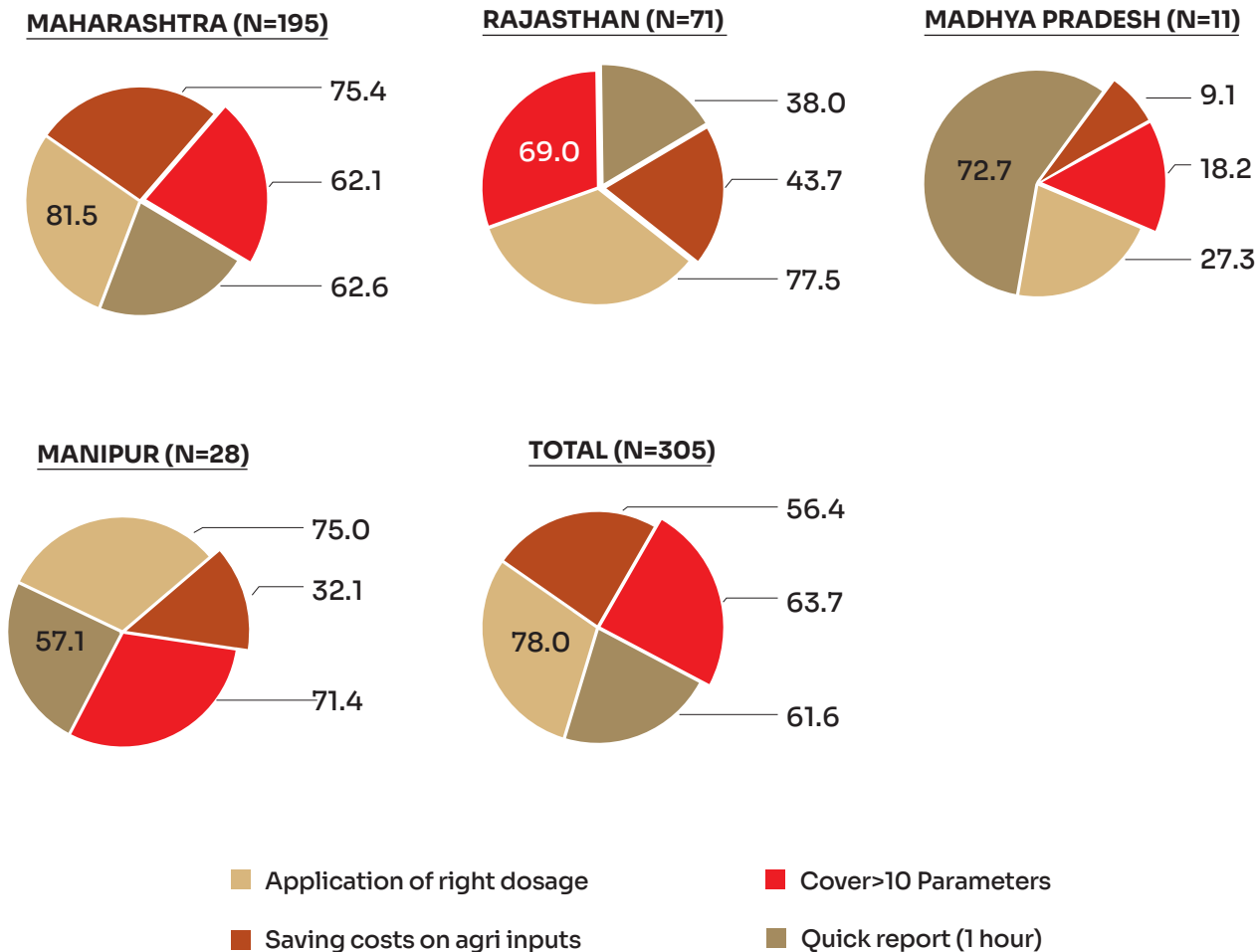


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1.8 SOIL TESTING AND ITS BENEFITS

Around 20.4 percent of the farmers surveyed have opted for soil testing through their respective FPOs. The major benefits reported by farmers have been the set of recommendations that they receive after the soil testing process. This largely includes correct dosage of nutrients based on crop variety and landholding. Farmers during the qualitative exercises opined that there was limited awareness previously and soil testing helped them to take better decisions. The soil health card covers 11 parameter parameters which is higher in comparison to other tests conducted by government agencies. This results in farmer's saving costs on agri inputs that are not required.

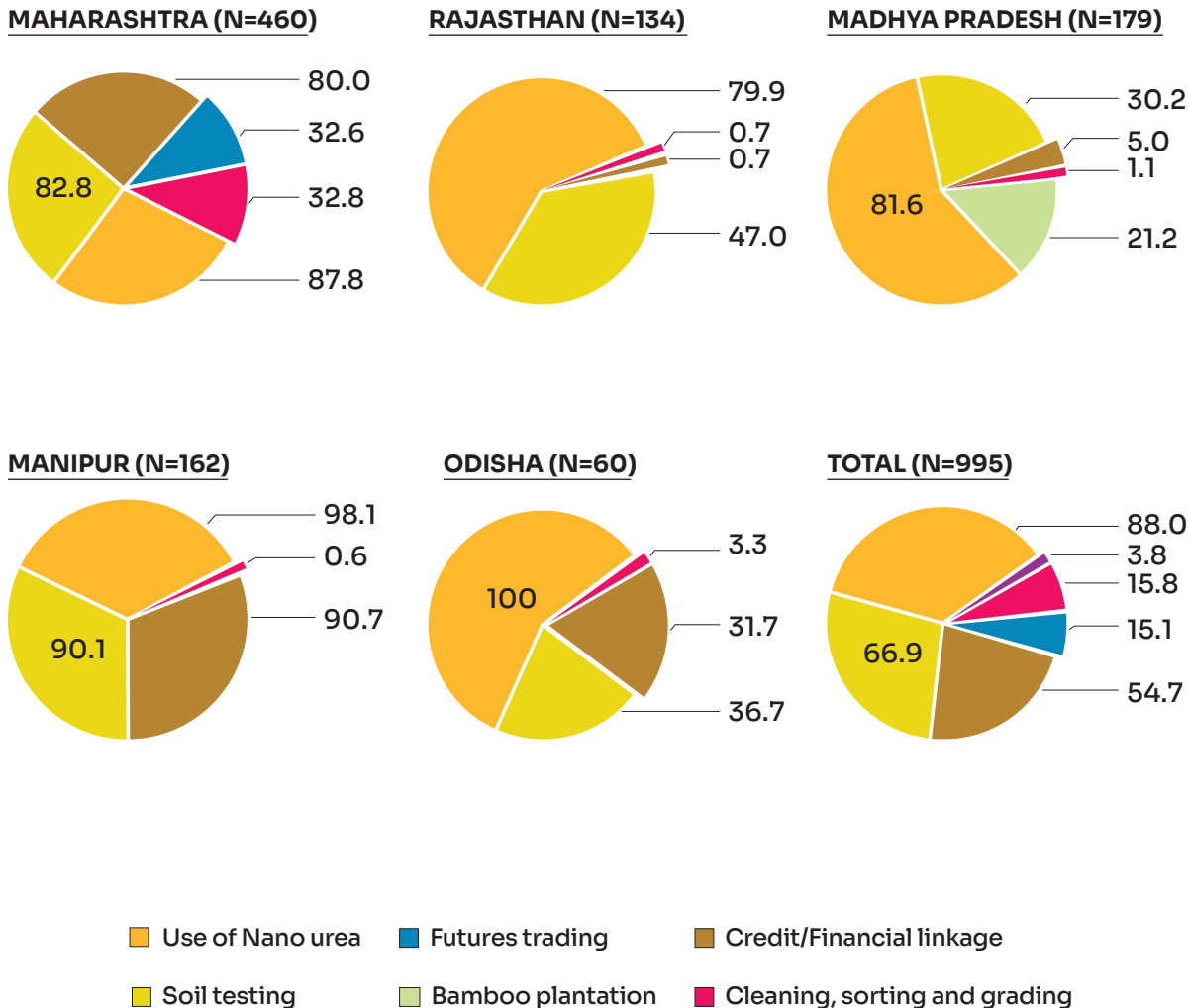
BENEFITS OF SOIL TESTING DONE THROUGH FPO



1.9 CAPACITY BUILDING MEASURES

DER through its FPOs provides regular capacity building to shareholder farmers. The topics range from use of new agri inputs, soil testing, credit linkages, futures trading in case of Maharashtra, post-harvest practices like cleaning, sorting and grading and bamboo plantation (Madhya Pradesh) among others. Out of 1498 farmers surveyed during the impact study, 66.4 percent opined about the trainings they have received through their respective FPOs.

Use of liquid Nano urea, soil testing, and credit linkage has been reported as major training subjects by most of the farmers across five geographies. Capacity building of farmers was undertaken prior to start of the season on these subjects hence farmers during the survey had better recall of these subjects.



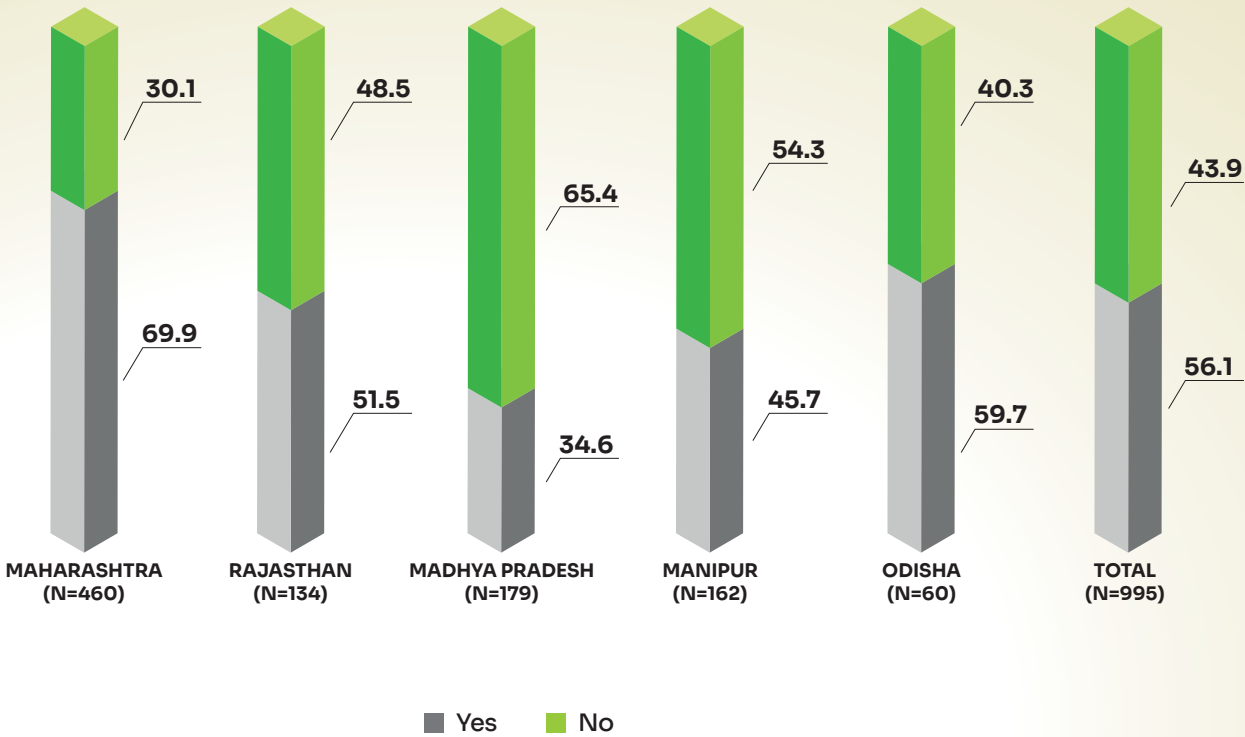
My name is **Hidam Kunja Bihari** and I recently joined Kangleisana FPC, an organization promoted by Dvara. I had recently retired from Manipur Force as an officer and decided to embrace farming as my new venture. Through the FPC, I discovered the ease of availing farm loans from Dvara E-Registry. To my delight, the process was very convenient, and the doorstep collection service proved to be a great time saver. I couldn't have asked for a better support system for my farming journey.



“ To my delight, the process was very convenient, and the doorstep collection service proved to be a great time saver.

”

FARMERS USING
DOORDRISHTI
KRISHAK MOBILE
APPLICATION



2.1 Farmers using Doordrishti Krishak
Mobile Application

DER offers digital solutions through Doordrishti which is a comprehensive platform for day-to-day operations and accounting. It has 3 interfaces i.e., FPO Saathi Dashboard, Krishak Saathi Mobile Application for the field representative and Krishak Mobile application for the farmers. FPO Saathi dashboard is a web interface for FPOs to digitally manage all data of the farmers, have georeferenced farms data, and to communicate with the farmers , and to scale agri input and output business based on business opportunities shared on the platform.

At present, 56.1 percent of the surveyed farmers are using the Doordrishti Krishak Mobile Application for agro advisories, price information and updates from FPO for sale of agri inputs and purchase of agri produce. DER undertook an initial study in February-March 2022, at that time close to 680 farmers were interviewed and percentage of farmers using the application was 32 percent. Concentrated efforts have been made by the Program teams to encourage farmers to use the application in the last eight months.



CHAPTER – 2

2.2 SHAREHOLDER FARMERS RECEIVING INFORMATION ON CURRENT APMC / FUTURES PRICE (THROUGH APPLICATION OR FR) AND IT’S BENEFITS

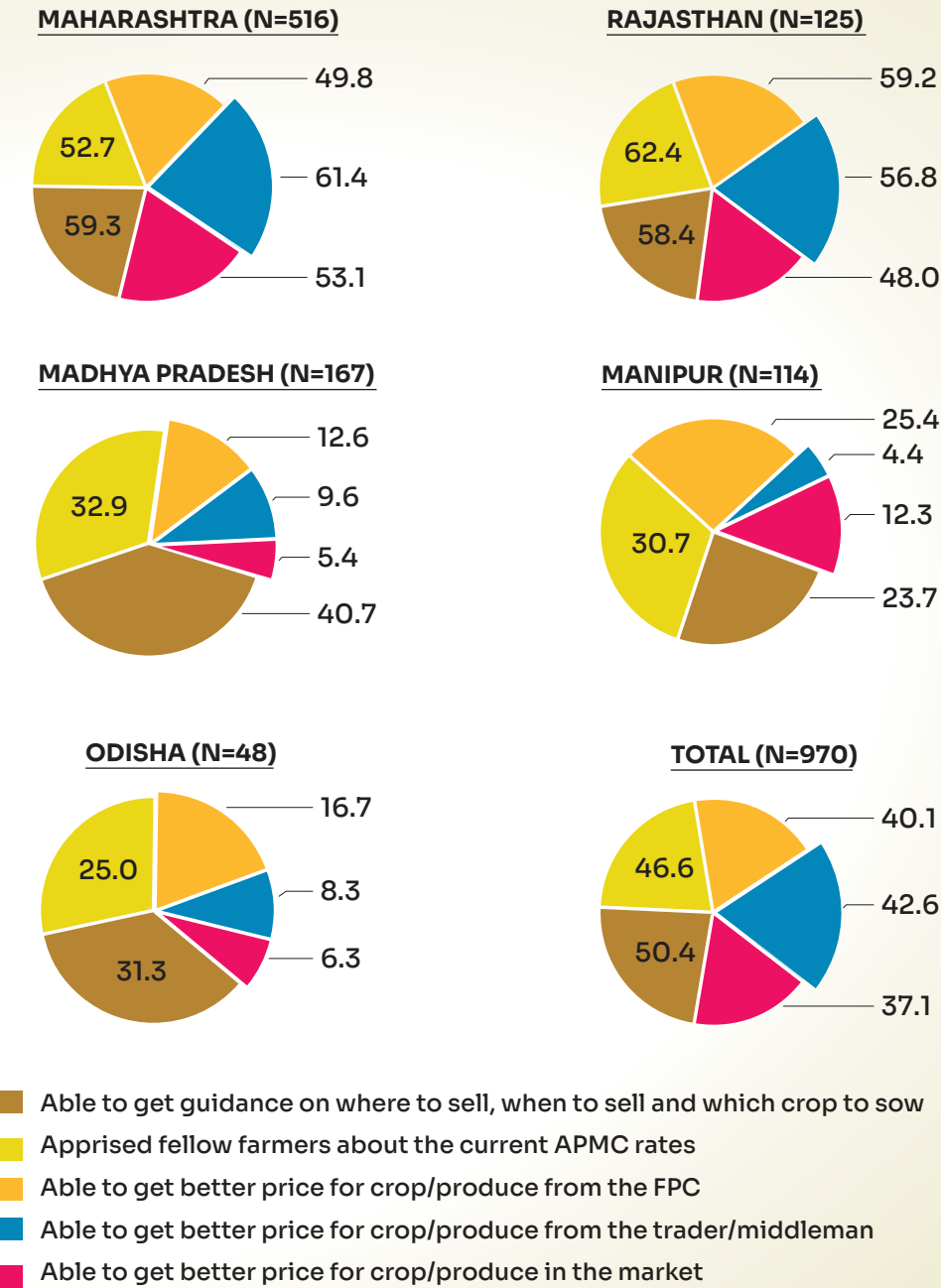
DER communicate the daily spot prices from 2000 major Agricultural Produce Market Committees (APMCs) for over 70 agri commodities. It also provides futures prices of agri commodities listed on derivatives platform.

Out of 1498 farmers surveyed, 64.8 percent farmers admitted that they are using the price information received through the Krishak mobile application or through the FRs. Of those, who are receiving information, more than 50 percent said that price information helps them to negotiate better in the market with different players like traders and middlemen.

FARMERS RECEIVE INFORMATION ON CURRENT MANDI/APMC/FUTURES PRICE THROUGH DOORDRISHTI MOBILE APPLICATION OR FR



BENEFITS TO FARMERS BECAUSE OF PRICE INFORMATION ON MANDI/APMC/FUTURES PRICE



“ Out of 1498 farmers surveyed, 64.8 percent farmers opined that they are using the price information received through the Krishak mobile application ”

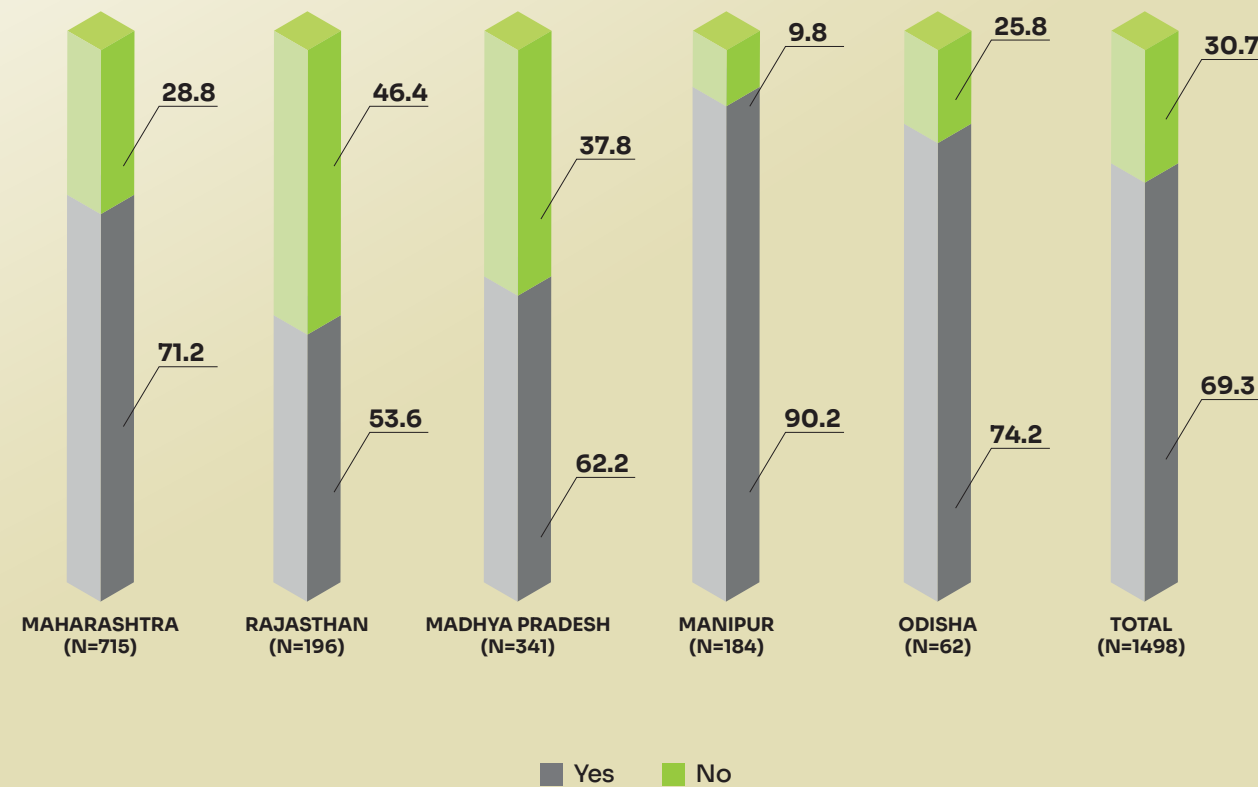
2.3 SHAREHOLDER FARMERS RECEIVING AGRO ADVISORIES AND ITS BENEFITS

Farmers receive customised crop advisories adjusted according to the soil type, crop sown, date of sowing, duration of crop and block level weather forecast including advisories on pre-sowing, land preparation, seed treatment, sowing, nursery preparation, irrigation management, flowering, harvesting, and postharvest practices.

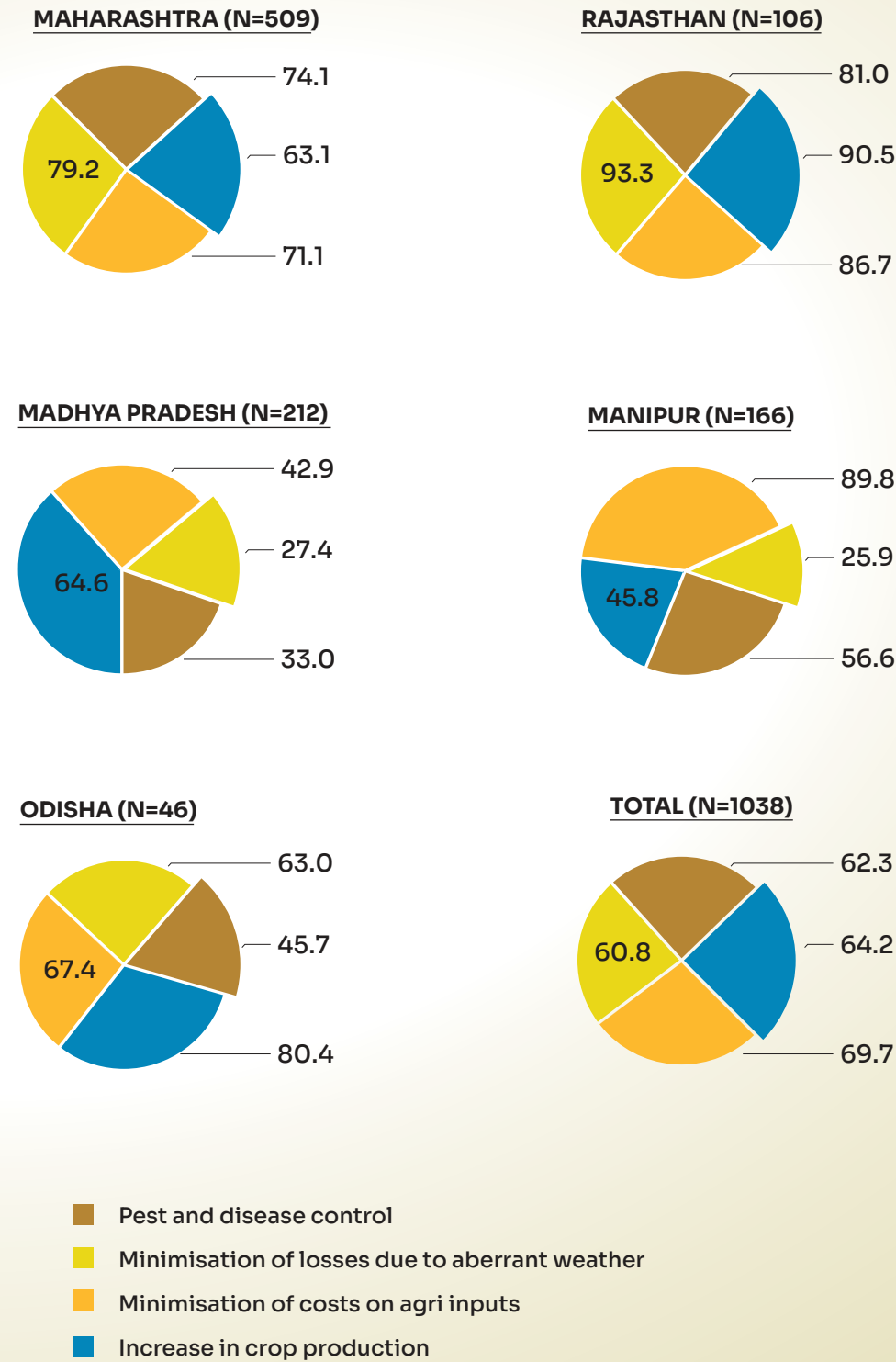
Crop advisories are one of the premium services that DER offers to shareholder farmers via the Doordrishti mobile application. Out of 1498 farmers surveyed, 69.3 percent farmers said that they are receiving various agro advisories through their Krishak mobile application or messages.

70 percent of farmers believe that these agro advisories help them minimise the cost of agri inputs. About 62 percent mentioned additional advantages like increased productivity and prevention of losses due to pests and diseases.

FARMERS RECEIVE AGRO ADVISORIES THROUGH THE DOORDRISHTI MOBILE APPLICATION OR FR



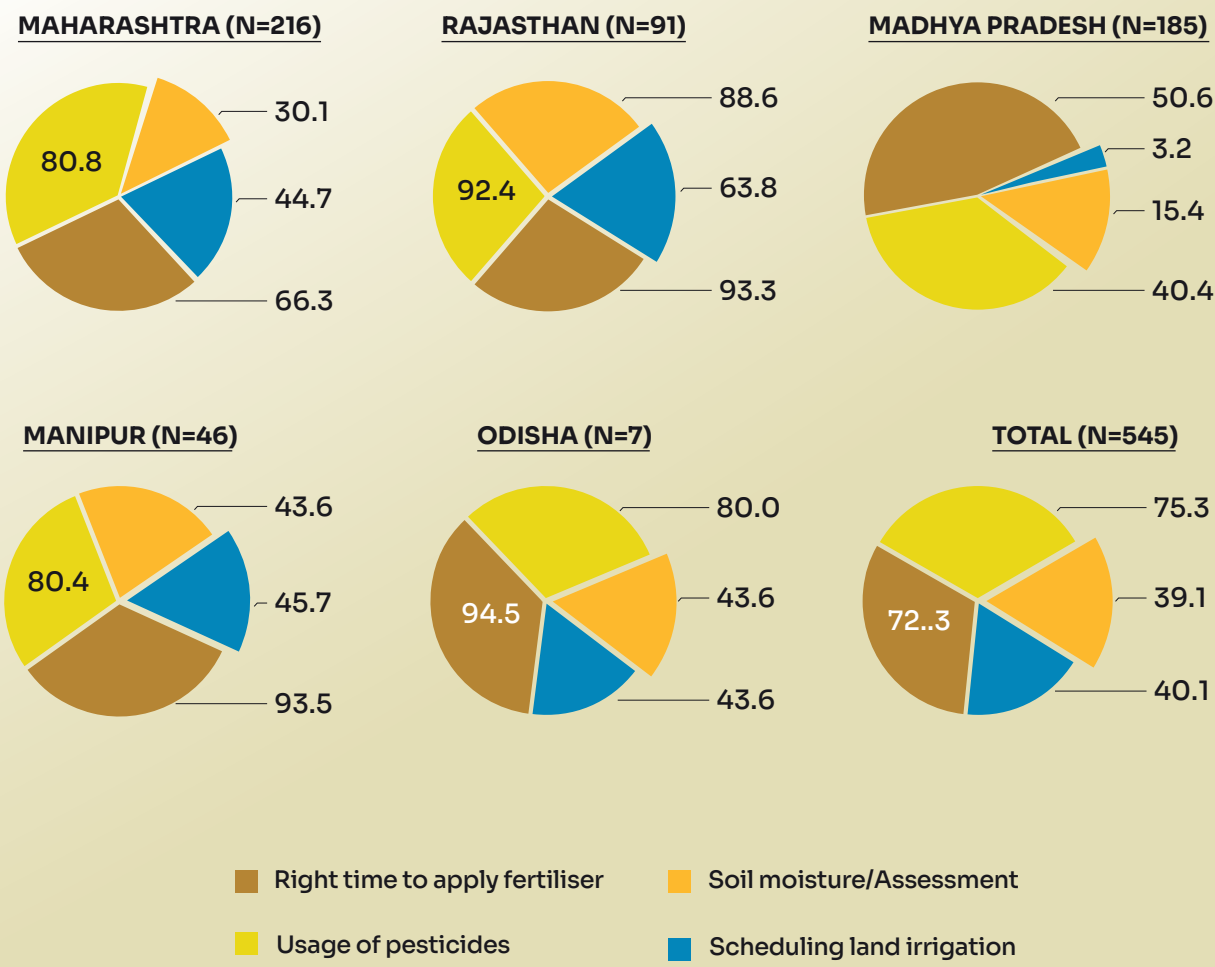
BENEFITS TO FARMERS BECAUSE OF AGRO ADVISORIES



CHAPTER – 2

2.4 SHAREHOLDER FARMERS RECEIVING WEATHER FORECAST THROUGH THE DOORDRISHTI KRISHAK APPLICATION OR FR AND ITS BENEFITS

Block level weather forecast is an important feature of Doordrishti Krishak application. Block level weather forecast assists farmers to schedule their cultivation practices. This way, farmers can manage their costs and efforts. Around 36 percent farmers said that they receive weather forecast and weather advisory through the Doordrishti Krishak application or through the FRs. Of those who receive these weather-related advisories, 75.3 percent expressed that it helps them in determining the right time to use pesticides followed by 72.3 percent who said that it helps them in assessing correct time for fertiliser application.

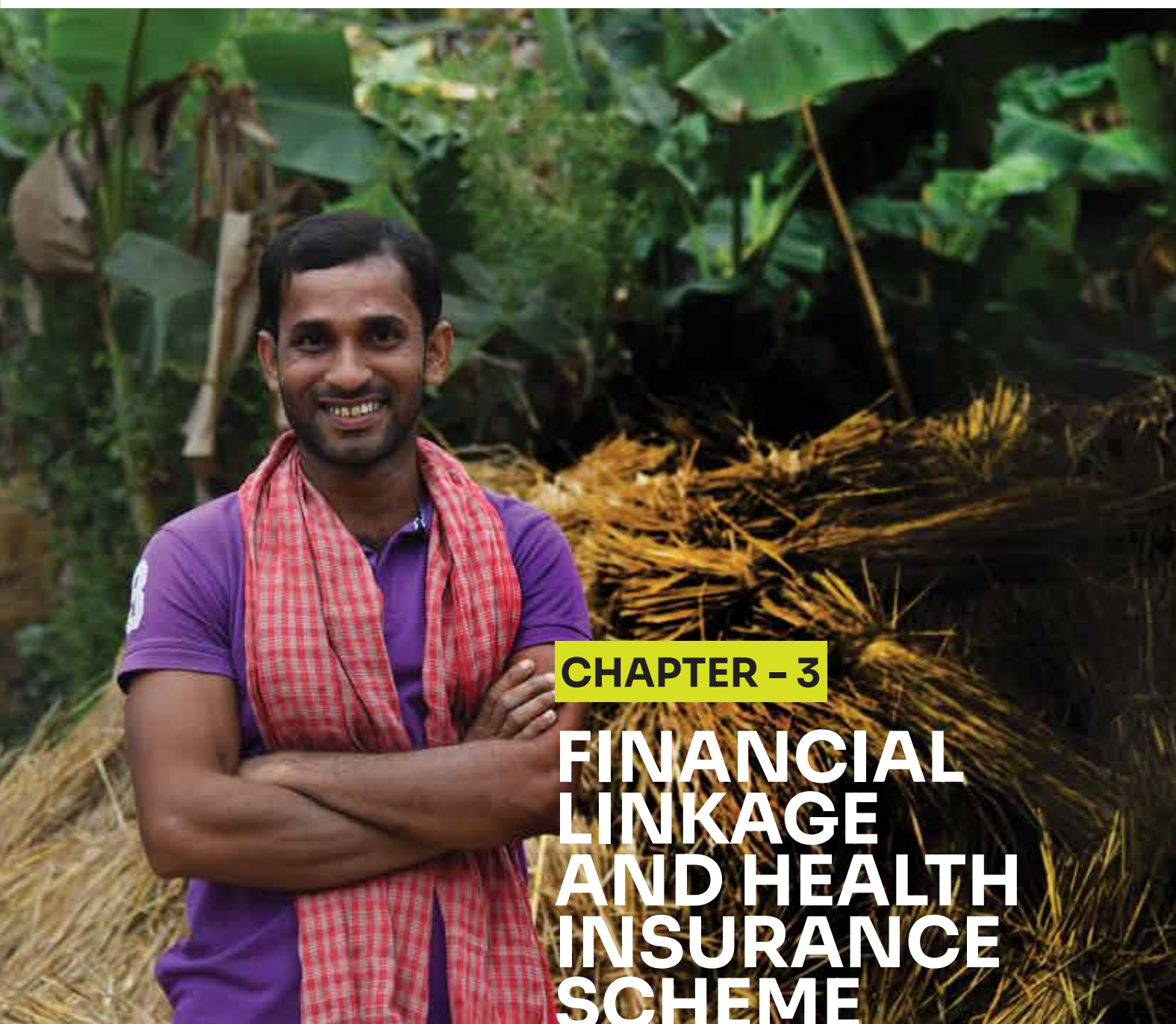


My name is **Thongram Nungsirei Devi**, a 45-year-old farmer and a member of FPC, promoted by Dvara E-Registry. Ever since I got married, I have been into integrated farming and have been doing this for more than two decades now. When I availed credit from Dvara to expand my farming, I was amazed by the smoothness of the process, a stark contrast to my past experiences with other loan providers. The doorstep collection feature has been a great time saver for me.

Being part of the FPC has brought numerous benefits to my farming. It has enabled me to access better inputs for my farm and avail soil testing services. I feel grateful for the opportunities and support that FPC and Dvara E-Registry have provided, helping me enhance my agricultural productivity.



“...I feel grateful for the opportunities and support that Kangleisana FPC and Dvara E-Registry have provided...”



CHAPTER - 3

FINANCIAL LINKAGE AND HEALTH INSURANCE SCHEME

The financial linkage programme for smallholder farmers arose from the understanding that a major limitation to agricultural development is a lack of liquidity. The smallholder farmers have relatively little surplus produce beyond what is required for family consumption, that they can sell in the market to fund the purchase of agricultural inputs. Previous experience has shown that monies may be borrowed from non-institutional lenders, albeit at exorbitant interest rates. Loans are also available from unofficial sources in exchange for the advance sale of crops at prices far below those in the market during harvest. Interest payments on such loans consume a large portion of a small farmer's current income, lowering their standard of living, keeping them perennially in debt, and in some circumstances leading to land alienation, which contributes to increased landlessness.

Hence, a well-designed lending scheme with competitive interest rates is thought to drive away other informal lenders, hence reducing rural poverty.

The extremely skewed land distribution pattern precludes equal sharing of the gains of agricultural growth, which are mostly reaped by the wealthy. If a small farmer could benefit from a low-cost credit programme, their farm's increased output would translate into increased revenue and purchasing power. Institutional credit is widely acknowledged as a critical component in crop production. The new and developed crop varieties require large amounts of investment on Purchase of inputs such as hybrid seeds, chemical fertilizers, pesticides and irrigation systems. The smallholder farmers cannot afford such large investments and hence cannot participate in the diffusion of the new technology as much as the large farmer. Thus, the availability of new technology will steadily expand rural income disparities, unless smallholder farmers are backed by low-cost loans. To fully harness the potentials of the new technology, even medium and large farmers would require institutional funding to make medium and long-term investments in irrigation equipment and agricultural machinery.

Even though the government has launched a slew of programmes for farmers and landless labourers, and commercial and rural banks are swamped with cash, farmers' access to formal banking remains limited, while the informal channel continues to dominate. Moneylenders are thought to be more flexible than banks. In some cases, interest charged by money lenders is as high as 30% to 120%. Most of the farmers

interviewed were hesitant to go to the bank because of the paperwork, collateral requirements, and lack of non-productive loan options. Those who have had a bank loan sanctioned have found that the process is cumbersome and take months to realise, whereas these farmers do not plan their life in advance and instead seek out informal lending sources. The situation is aggravated when the borrower does not have a clear title of land the processes for establishing a charge are complicated. Any loan giving authority asks for land records, which might be challenging if the borrower is borrowing from multiple sources for short- and long-term purposes. The landlord normally does not give his land as collateral in the case of sharecroppers. Institutions also tend to lend to purposes for which it is simple to make a charge (an endorsement on the ownership papers in the case of tractors), recover the asset, and sell it, whereas landless labourers and sharecroppers have no collateral.

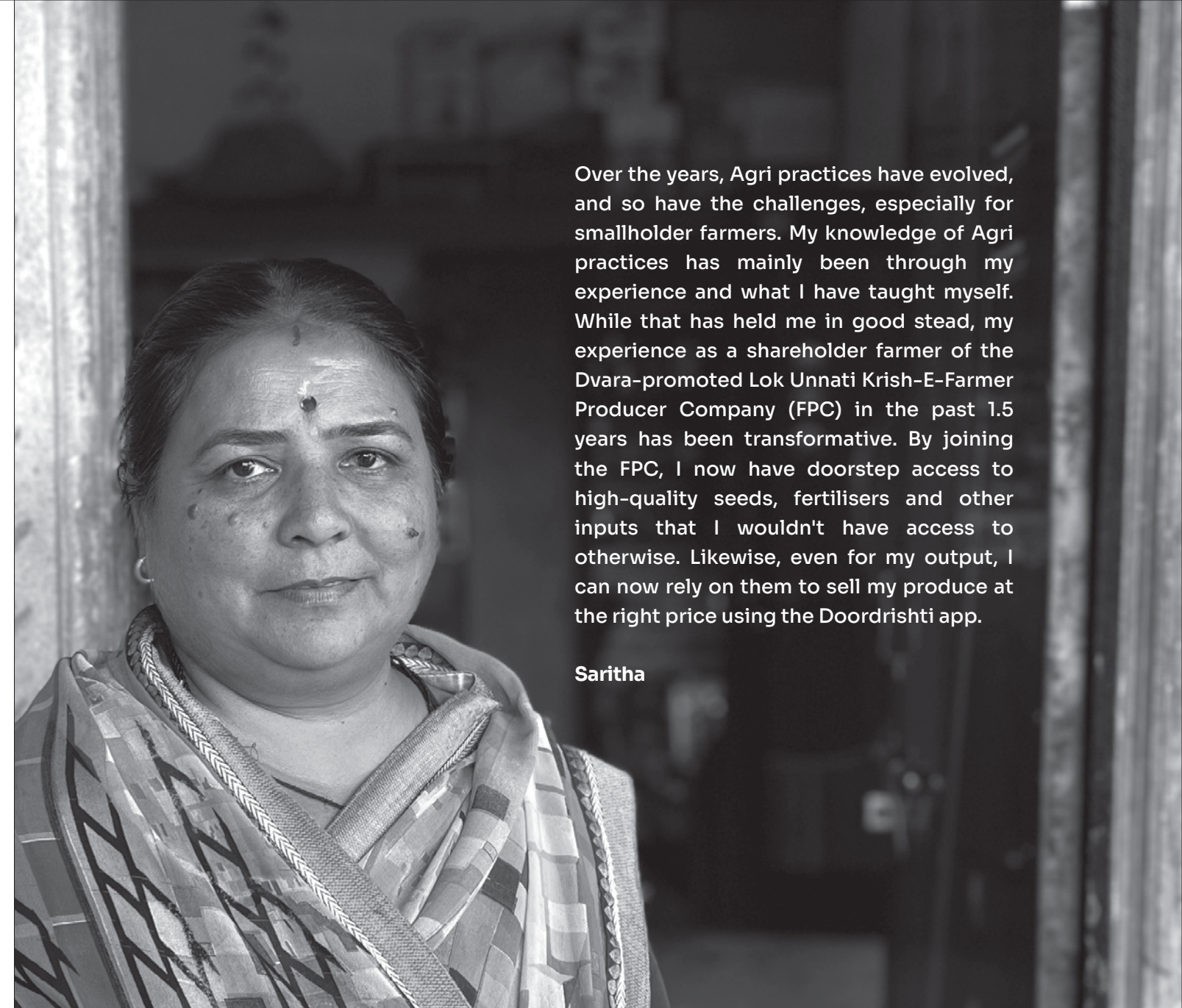


Sanuja Karan, BoD member of Bhim Pahad Krushak PC Limited, Bolangir sums it up by saying that documentation is a big hassle. Many farmers cultivate undivided lands that are registered in the names of their father or grandfather. "Banks want us to produce experience certificate but there is none in my name. If I produce experience certificate in my grandfather's name, it is rejected. I am asked to produce rights, tenancy and other forms and the process is arduous.

Furthermore, significant number of farmers were unaware of the government's different schemes to avail low-interest loans up to Rs. 50,000 without collateral (crop loan) and Kisan Credit Cards, which are specifically designed for them. They were

similarly unfamiliar with group lending, with only 17 out of 79 having heard of it. Customers in rural areas are unlikely to visit bank branches because of opportunity costs and time constraints, therefore banks will have to reach out to them through a number of methods, including weekly banking, mobile banking, satellite offices, rural ATMs, and the usage of post offices.

This helps to summarise that most marginal farmers and landless labourers lack access to basic financial services such as savings, loans, and insurance in a way that is reasonably convenient and flexible in terms of access and design, as well as reliable in the sense that savings are safe and insurance claims will be paid with certainty.



Over the years, Agri practices have evolved, and so have the challenges, especially for smallholder farmers. My knowledge of Agri practices has mainly been through my experience and what I have taught myself. While that has held me in good stead, my experience as a shareholder farmer of the Dvara-promoted Lok Unnati Krish-E-Farmer Producer Company (FPC) in the past 1.5 years has been transformative. By joining the FPC, I now have doorstep access to high-quality seeds, fertilisers and other inputs that I wouldn't have access to otherwise. Likewise, even for my output, I can now rely on them to sell my produce at the right price using the Doordrishti app.

Saritha



“ Likewise, even for my output, I can now rely on them to sell my produce at the right price using the Doordrishti app. ”

3.1 SHAREHOLDER FARMERS RECEIVING LOAN SERVICES FROM FPOS AND ITS BENEFITS

To minimize the vicious chain on non-institutionalized lending, DER identifies creditworthy farmers and provides them with loans and insurance in collaboration with partner financial institutions. 60 percent of these farmers do not have a CIBIL score which means their Credit history is nil whereas 70 percent are accessing the institutional lending for the first time.

DER uses data generated by the Doordrishti platform's analytics stack and combining it with farm and farmer specific geo-spatial and weather analytics. It provides end-to-end farm loan management to collaborate with the financial institutions, starting with farmer acquisition, onboarding continuing through credit underwriting, loan disbursement, monitoring and risk management, and collection.

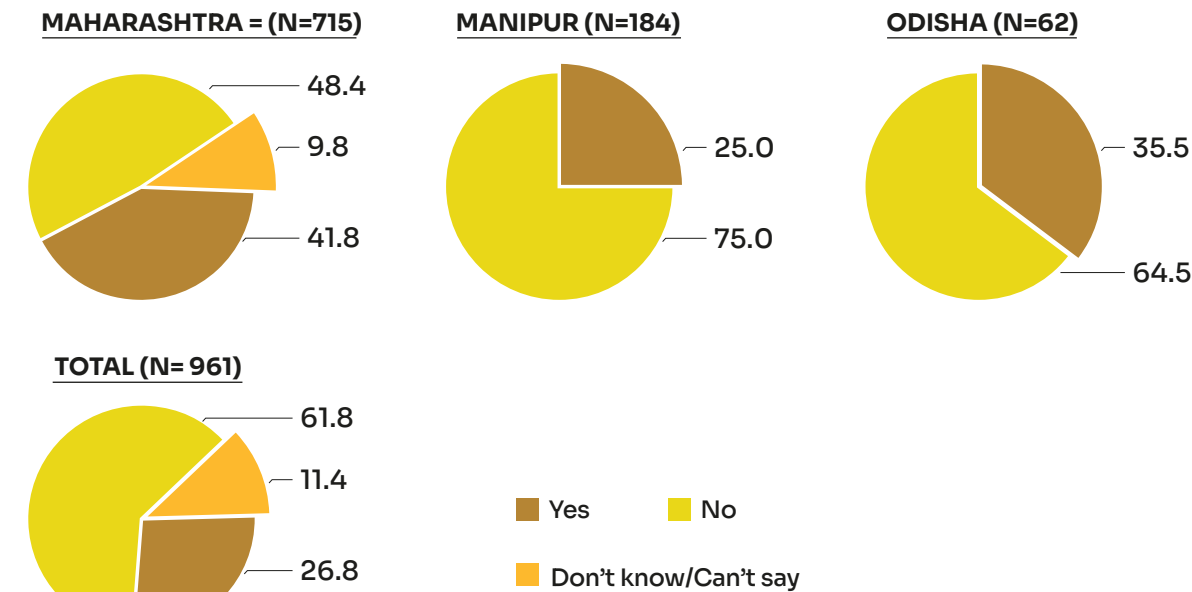
Farm assessment is facilitated through the KhetScore and KhetScoreNow analytics that provide historical and real time data for accurate assessment. KhetScore is a comprehensive farm report on the historical performance of land parcel. Khetscore is a Proprietary technology to gauge creditworthiness of the farmers based on historical site level analysis of 11 parameters through our inhouse algorithm - no. of crops sown in last 3 years, crop health,

crop nutrition, soil moisture, plant moisture, mechanical damage & area under cultivation, and other meta data like temperature and rainfall during that period, incidence of droughts and flood, credit score of the farmer (if available).

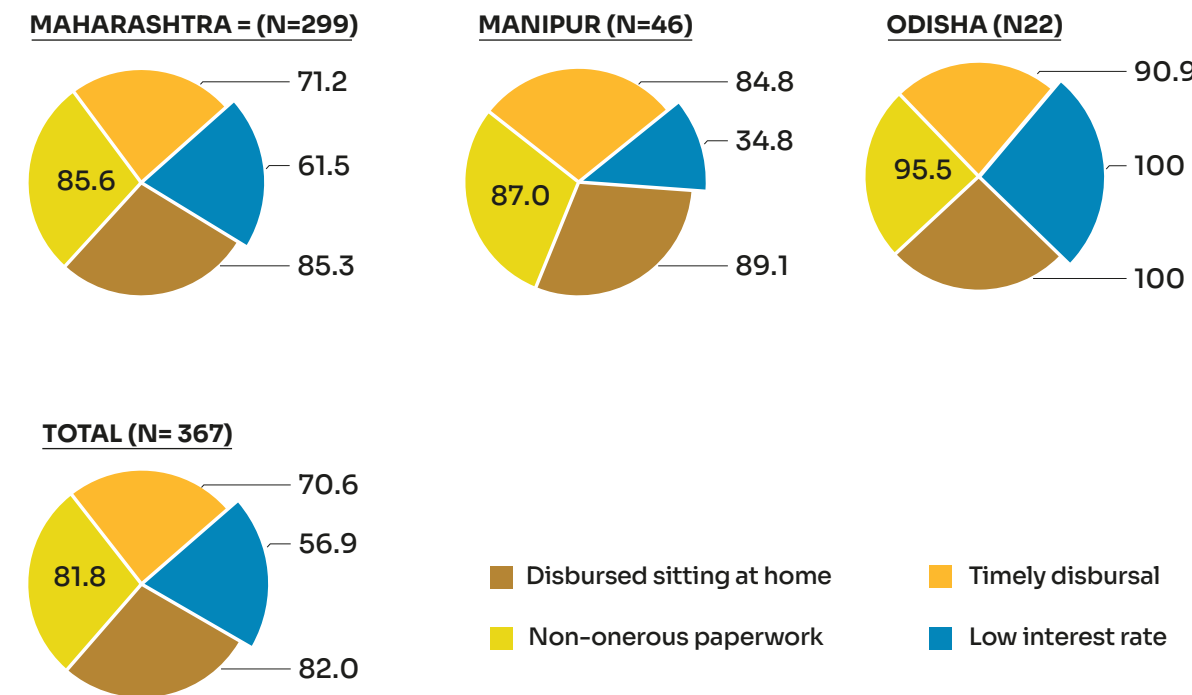
All this information is critical for credit underwriting, and optimising claim settlements for financial institutions. The end-to-end procedure is facilitated by DER as Business Correspondent through its team hence it allows financial institutions to engage with farmers without having to be physically there, greatly expanding their reach.

At present, DER through its FPO has provided collateral free crop loan to farmers in three states. Out of 961 farmers surveyed in above-mentioned three states, around 27 percent farmers have availed credit facility. Of those, who have availed the credit, close to 80 percent expressed two major benefits of the credit process, firstly the loans are disbursed at home followed by minimal paperwork. Another important feature is that loans are disbursed on time. The qualitative study conducted in early part of 2022 also brought forth similar findings where farmers said that onerous documentations of financial institutions is one of the major deterrents behind small holder farmers not getting the loan.

AVAILED LOAN THROUGH FPO



BENEFITS OF THE LOAN PROCESS



CHAPTER – 3

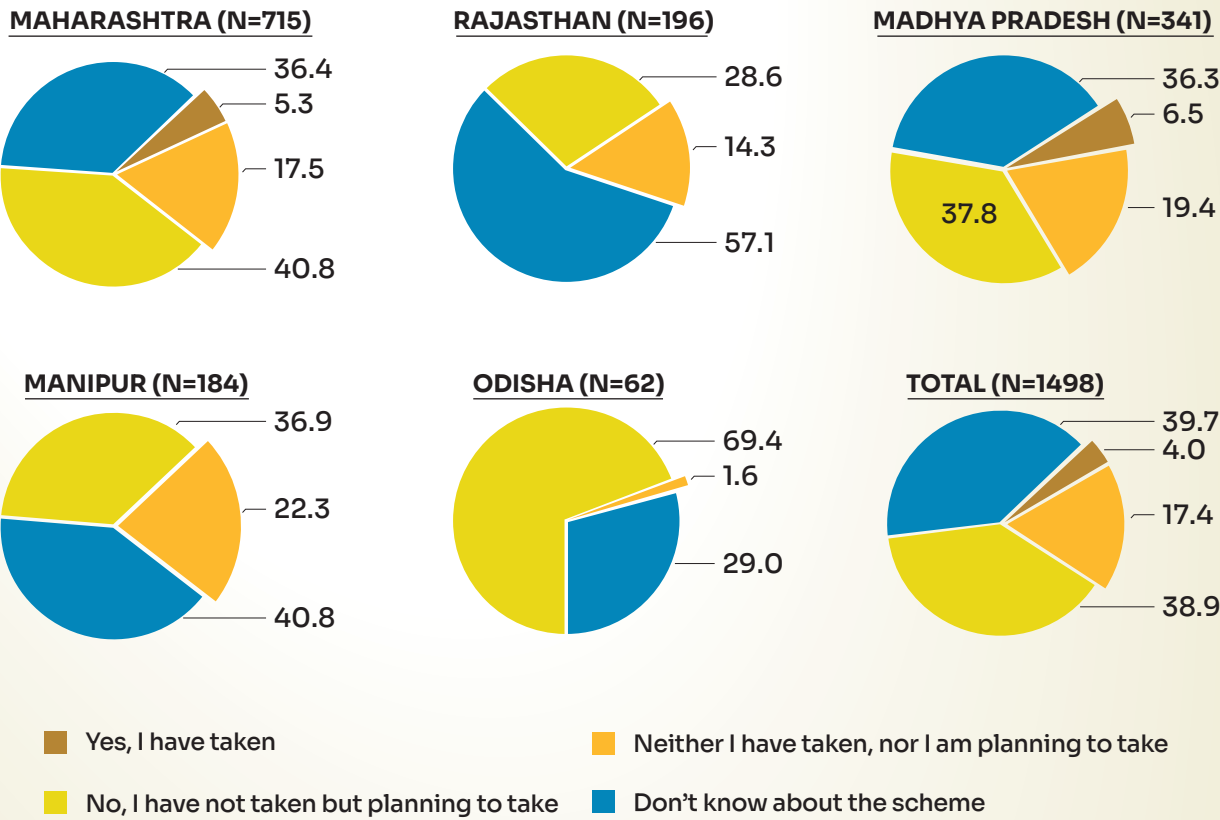
3.2 SHAREHOLDER FARMERS WHO HAVE TAKEN THE GROUP HEALTH INSURANCE SCHEME THROUGH DER AND ITS BENEFITS

DER has recently launched a group health insurance scheme for shareholder farmers and their family members. This group health insurance scheme is a complete package where the farmer will receive the benefits such as insurance cover during hospitalisation, accidental death cover, covering cost of education for 2 kids etc. during the insurance period and based on policy availed.

Since this product offering has been recently launched, majority of the farmers at present do not have much idea. Close to 4 percent farmers at present have taken the insurance offering while around 40 percent said that they have heard about the insurance offering and are planning to take the insurance.

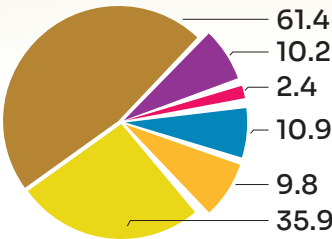
On the benefit part of it, 23.6 percent farmers said that all the components of the scheme are beneficial as this is for the first time, a holistic scheme like this has been launched for the farmers.

HAVE TAKEN GROUP HEALTH INSURANCE SCHEME

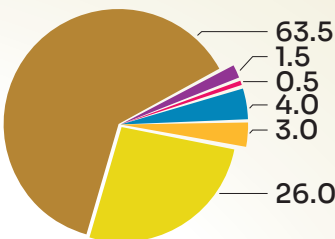


BENEFITS OF THE INSURANCE SCHEME

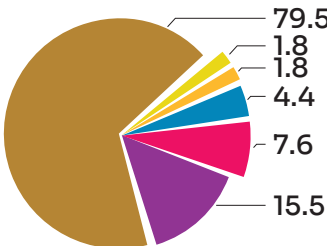
MAHARASHTRA (N=715)



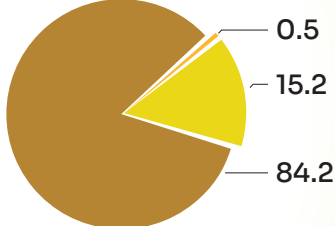
RAJASTHAN (N=196)



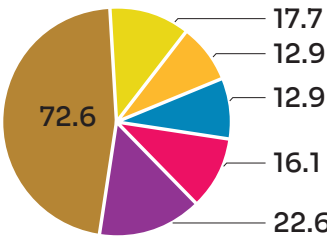
MADHYA PRADESH (N=341)



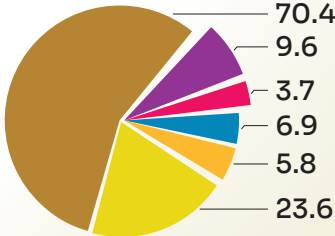
MANIPUR (N=184)



ODISHA (N=62)



TOTAL (N=1498)



- Can't comment/No idea
- All of it
- Rs 50K for kids in case of accidental death
- Maximum Rs 50K for Hospital Expenses in
- 1 Lakh for Accidental Death / Disablement
- Rs 30K-60K for hospital cover and ICU

The Doordrishti app has been invaluable to me, not only for fulfilling my input requirements but also for obtaining real-time market prices of crops. This information assists me in two significant ways: making informed decisions about which crops to sow and time and location for selling produce. Additionally, detailed information about fertilisers, and their expands my options on hearsay. Moreover, one proven particularly weather these

determining the optimal my agricultural having access to the right products, respective prices beyond relying solely feature that has beneficial is the updates. This year, updates played a crucial role in safeguarding my soya bean crop. Thanks to the weather advisory, which predicted rainfall for the coming days, I was able to prevent the crop, which was still in the field, from being wasted.

- **Rajesh Ramchandra Rane**

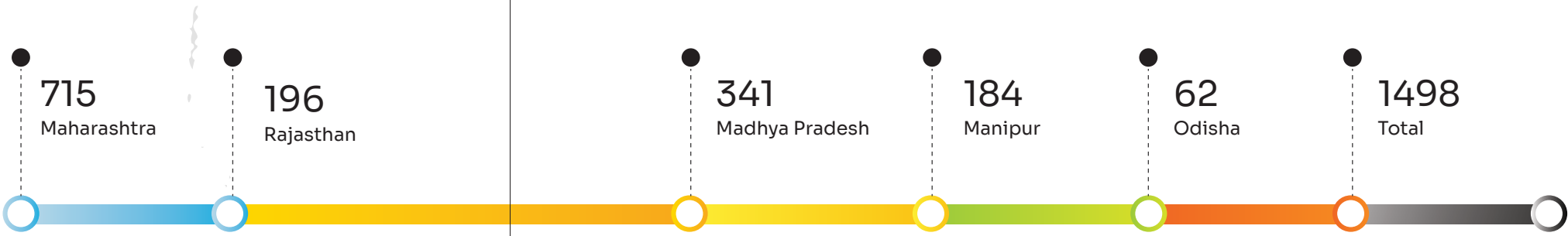
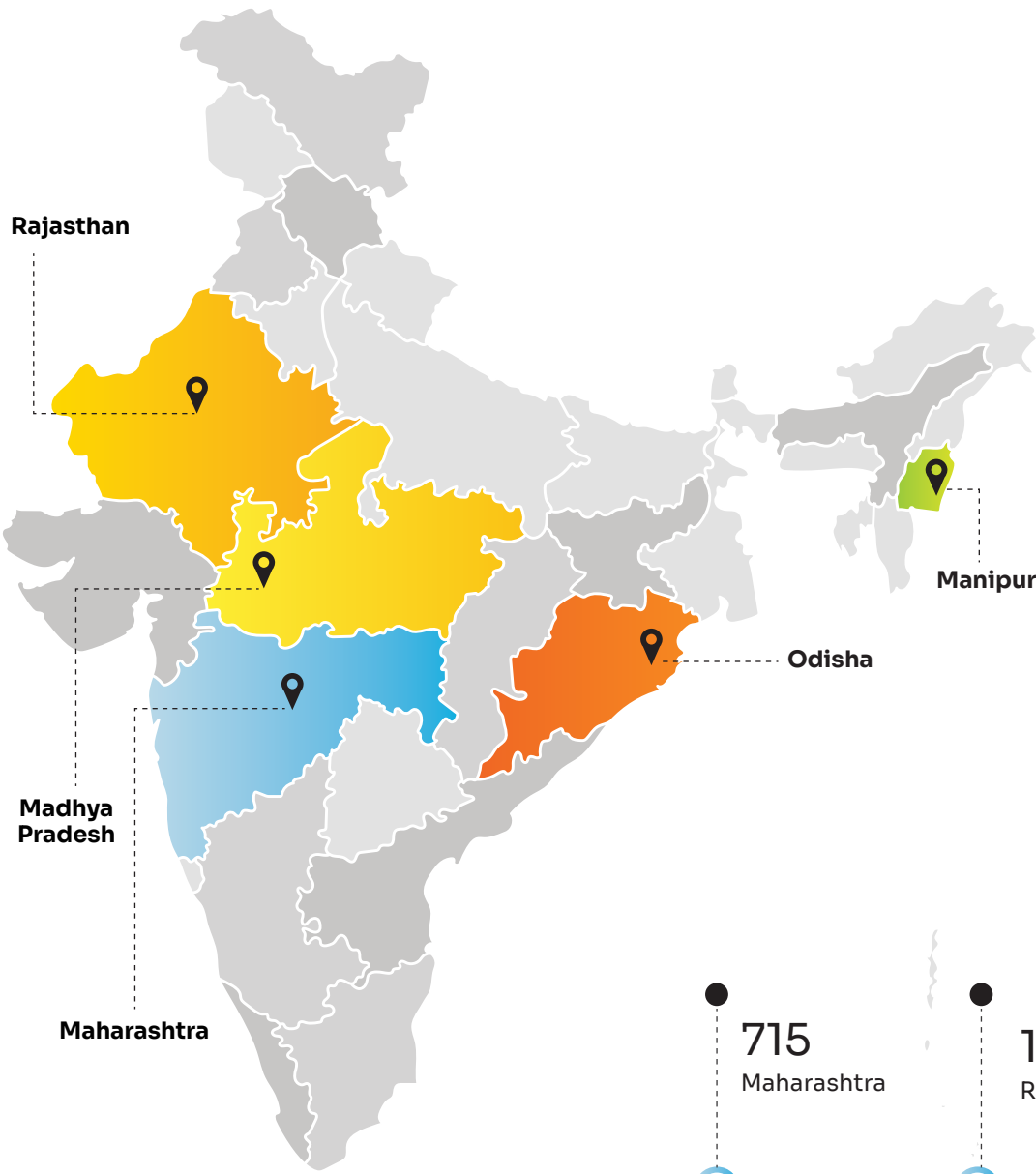


“ One feature that has proven particularly beneficial is the weather updates. This year, these updates played a crucial role in safeguarding my soya bean crop

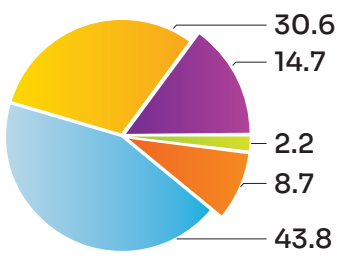
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FARMER’S OVERALL EXPERIENCES WITH FPOs

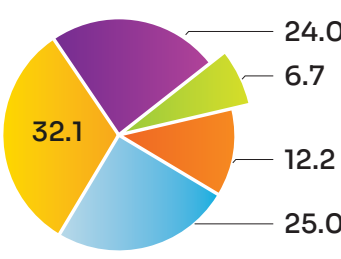
Around 70 percent farmers across all the five locations are satisfied with the overall experiences they had till now with their respective FPOs. 31 percent said that they are extremely satisfied while 14 percent were neutral in their assessment.



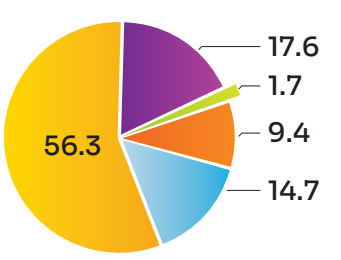
MAHARASHTRA (N=715)



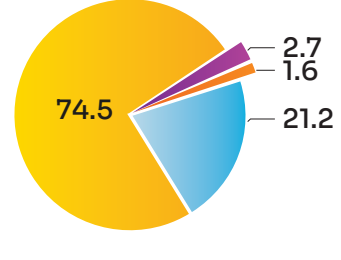
RAJASTHAN (N=196)



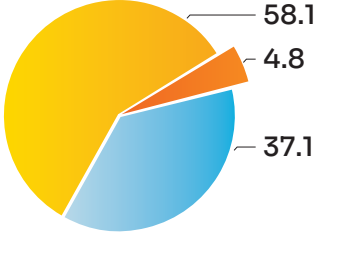
MADHYA PRADESH (N=341)



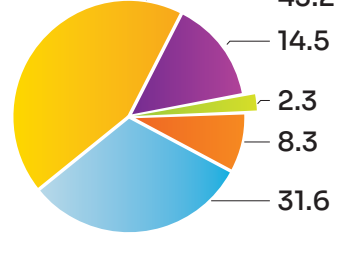
MANIPUR (N=184)



ODISHA (N=62)



TOTAL (N=1498)



- Extremely satisfied
- Extremely dissatisfied
- Dissatisfied
- Neither satisfied nor dissatisfied
- Satisfied
- Can't rate/Can't comment

My name is **Murli Lal**, from Poothpoora village, Dholpur, Rajasthan. I am shareholder in Saipau Unnatshil Farmer Producer Company. I have 1.5 acres of land on which I grow potato, mustard and bajra crops.

I can say with authority that the potato seed we farmers got through the FPC was of premium quality and the production was also very good. Secondly, the quality of mustard seed was also good in comparison to what I used to get from the market, production was also encouraging. I also got Chari seed and Bajra seed on good rates and on right time. Without Dvara E-Registry and without active involvement in the FPC, getting access to these quality inputs is truly a challenge.

Through Doordrishti Application, we farmers are not only able to produce better quality crops but also get better prices and timely updates.



“ Without Dvara E-Registry and without active involvement in the FPC, getting access to these quality inputs is truly a challenge. ”

WHAT FARMERS SAY

TESTIMONIALS AND CASE STUDY

The organisation continuously aspires to understand what the last mile user i.e., the farmers think about the intervention and offerings that they are receiving through their respective FPCs. This chapter will provide a glimpse of some of the testimonials that the organisation get from time to time. This helps Dvara E-Registry to understand its work through farmer's perspective and helps in bringing more vitality to the intervention. Following are some of the testimonials.



“

I am shareholder in Korei Farmer Producer company, and I am satisfied with what company is offering to farmers. **I bought a spray pump through the FPC which is available in Jajpur market for Rs 2,750/-. I wanted to purchase it from a long time. Through Korei FPC, I purchased the same pump in Rs 2200.** I have also bought Rabi vegetable seeds like chilly, cauliflower and brinjal through the company, there also, I have saved money. All these items were delivered in the FPC, so I saved some money on the transportation also. Farmers in my area are largely small holder farmers who require loan before the season starts. If that facility is also made available, farmers will be greatly benefitted. I hope that farmers like us will prosper in the future through the FPC.

Prasanta Kumar Malik,
Masudpur, Korei, Jajpur, Odisha

”

“

I have very small land on which I generally grow vegetables. I needed quick loan for vegetable farming, through the village head, I met Sudhanshu, got the loan easily after submitting Aadhar and Pan card. Best part of this programme is “ease of getting loan”. **I got the amount sitting in the comfort of my home.** Other farmers are also vying for this loan.

Hrusikesh Basantia,
Pangata, Bhadrak, Odisha.

”

“

I and many other farmers in my area, who have become shareholders are benefitting from the FPCs. FPC is arranging for Agri Inputs on time, which is a major challenge here, additionally, for farmers in Manipur, this testing of soil before season is a new concept, I am hopeful that it will increase my and other farmer's harvest in my village

Y. Thawailemba Meitei,
Langmeidong, Kakching, Manipur

”

“

I got a collateral free crop loan of Rs. 50,000 from Dvara E-Registry. I was in urgent need of loan and bank was delaying my loan process. With the help of Dvara E-Registry, I got the loan. The loan amount has helped me to purchase items like shelves, trowels, seedlings and other accessories for my green house. Ganesh from Dvara was very helpful and the process of acquiring the loan was seamless. I have been able to repay both the amounts on time. I am sure that smallholder farmers will benefit immensely largely because the paperwork involved is not onerous and DER staff is very prompt.

Rohini Sanjay Shinalkar,
Rautwadi Village, Shirur,
Pune, Maharashtra

”

“

I was initially hesitant to join the FPC as a shareholder, but now I can see the advantages. I am happy with the way, Lok Jagruti FPC is progressing. The farm loan that was given to me before the sowing season is the nicest part. I was able to purchase high-quality seeds and other inputs thanks to the loan money. Additionally, the FPC offers better prices on agricultural inputs than the market. Through the FPC, I have also sold my harvest of Red Gram and Soybean. In comparison to Mandi, the FPC has offered me a better pricing.

Rajesh Ramchandra Rane,
Daryapur, Amrawati, Maharashtra

”

“

Be it big farmer or small farmer, everybody needs loan and that too before the onset of sowing. On frivolous grounds, banks have denied me agriculture loans from last 2 years.

Then I came in contact with Dvara staff member. He apprised me of the process. I applied for the loan and within 15 days, I got the amount. It was a smooth process. I have bought fertiliser, seeds and some farming equipment from the money. I have now repaid the loan and hopefully I will get next loan easily.

Usha Tanaji Raut, Rautwadi,
Shirur, Pune, Maharashtra

”

“

I did not know the concept of FPC as in Manipur, we have not heard about it previously but now, after being member in Kakching FPC from 9-10 months, I am able to understand the benefits of being part of such group. Good quality agri input is always short in supply in our area and farmers travel long distance to Churachandpur or Imphal to procure these goods. Through the FPC, I have purchased Spray pump, Nano urea and Phosphate on reasonable price in my village. Farmers who are not shareholders also now want to take membership in FPC. I am sure many more farmers will join this FPC in 1-2 years mainly because the FPC is offering better prices on agricultural inputs than the market.

Ranjit Thounaojam,
Langmeidong, Kakching, Manipur

”

“

I grow Bamboo on 1.5 acre of land, I became shareholder in the Badhauranath FPC, Sidhi last year and I along with and other farmers are benefitting from the FPCs. This year I have been able to sell 8 MT of bamboo through my FPC. This is for the first time that I have been able to sell the complete harvest in one go and have received the payment on time. There are no avenues to sell bamboo in our region and we were not able to sell the complete harvest, in addition, earlier the bamboos were procured from other states like Assam but through the efforts of FPC, we have been able to show that bamboos can be made available locally in our region. As far as cost is concerned, this is the beginning, and I am sure that we will be able to make better profit in years to come.

Rakesh Kumar Mishra,
Naudia Village, Mahjaluli, Sidhi, Madhya Pradesh

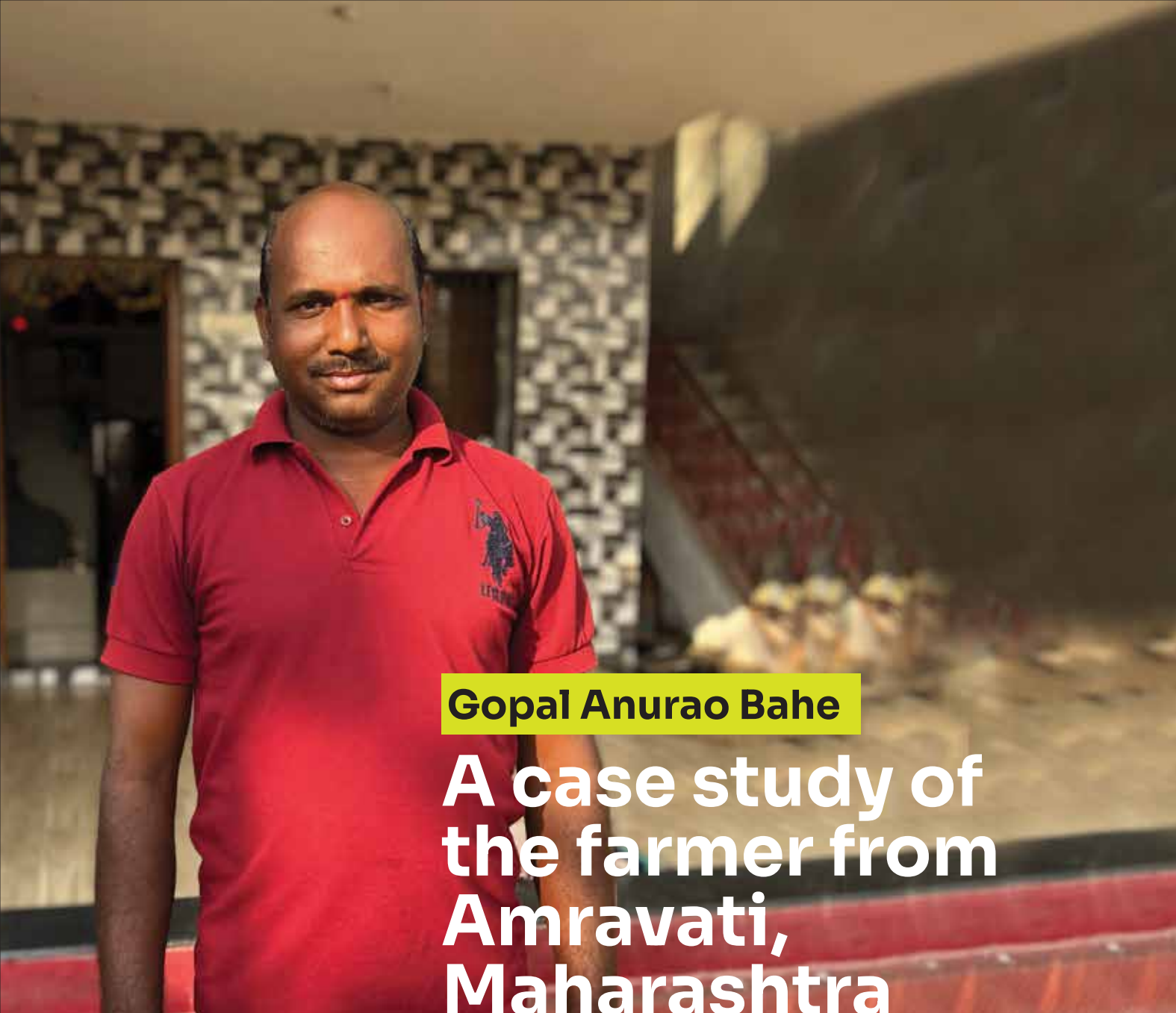
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“

I became shareholder in Ithoudang Farmer Producer Company in May 2022. Initially we were sceptical about this whole concept of FPC. Since the time I have become a member, I have got few benefits which I can share. Urea and other fertilisers are generally not available here. Through the FPC, I have got Nano urea and the FPC person also trained us how to use it. Secondly, I also got my soil tested for the first time as we never knew that something like this existed. Post the testing process, I got the soil health card, I am hopeful that it will increase my produce. I will certainly practice whatever has been recommended. I also purchased a spray pump for Rs 2100 and some insecticides. Both these commodities were delivered at the village. Earlier we had to travel to Thoubal main town or Imphal to buy these things. I hope that FPCs will provide us more benefits in the future.

Bino Kumari,
Papal, Thoubal, Manipur

”



Gopal Anurao Bahe

A case study of the farmer from Amravati, Maharashtra

Gopal Anurao Bahe was born in 1986 in Kasbegavhan village of Anjangaon block of Amravati district, Maharashtra.

Gopal Bahe owns a total 5.5 acres of land on which he largely grows Cotton and Soyabean.

After completing his higher secondary, he started helping his father in farming. He learnt and imbibed the skills of farming from his father. Gopal always has a progressive outlook when it comes to farming and he has always been a key learner of new innovations and new techniques. Through various interactions over last few months, it was learnt that Gopal always looks out for new avenues and platforms to learn emerging trends in farming especially in Vidarbha belt of Maharashtra.

Shareholding in Farmer Producer Company

Dvara E-Registry started its operation in Amravati in the year 2021. Gopal Bahe was instrumental in mobilising farmers for the FPC, Lok Unnati Krish-E FPC. It took him only two days to understand the importance of being a shareholder in the FPC. He actively participated in village level meetings and motivated other farmers to buy shares in the FPC. He joined the company in the month of May in the year 2021.

As a farmer, becoming a shareholder in the FPC has been a boon to Gopal Bahe. Since becoming a shareholder, he is getting all his input needs from his FPC. This includes fertilisers, seeds, agrochemicals, and gypsum among others.

In addition to the foregoing, the FPC encouraged him to undergo a soil test. With the use of the soil health card generated following the soil testing procedure, Gopal Bahe was able to better understand the nutrient content of the soil and apply chemical fertilisers as advised while using fewer chemicals.



He mentioned that purchase of Bengal Gram through the NAFED centre of FPC holds special significance to him as there was no NAFED centre prior in his village and he had no choice but to travel to other village to avail this facility.

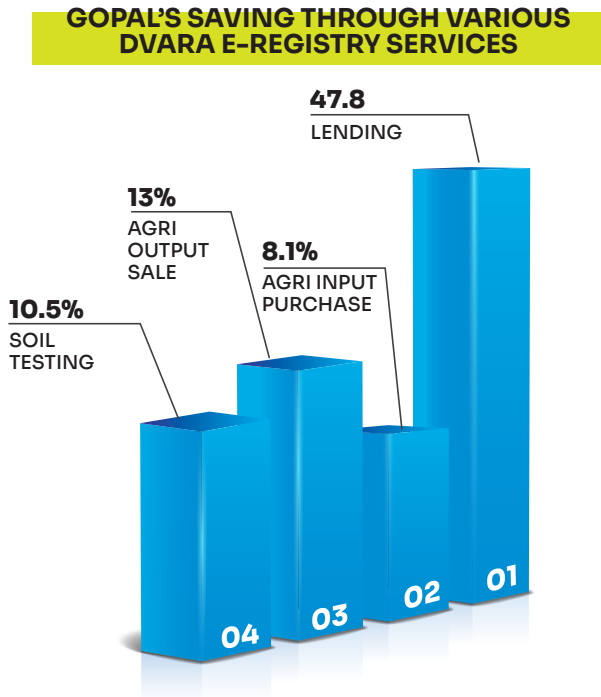
As per him, the FPC has all its facilities under one roof. In addition to the NAFED centre, FPC has assisted him in making connections with trustworthy processors for the sale of Red Gram. He got a price that was Rs 100 over market price; as a result, he was able to make a sizeable profit, and that too without using a middleman. He was given the financial

assistance by the FPC through its lending programme. Gopal Bahe was able to take care of his farming demands thanks to getting an agriculture loan at the proper time and before the start of the season. Last but not least, the Doordrishti Krishak mobile application aids farmers like him in receiving timely meteorological and agricultural advisories as well as the most recent commodity market prices.

His testimony demonstrates that he is happy and content with the services offered by his FPC. He sees a bright future for the farmers in his area after the introduction of FPC.



Services offered through Lok Unnati Krish-E Farmer Producer Company Limited



a. Lending: In June 2022, Gopal Arunrao Bahe received a loan for Rs 30,000. He has bought agricultural inputs like Cotton and Soyabean seed using the money. He expressed that the FPCs loaning process will be successful in future because it provides loans to farmers at the right time which is before the sowing season. He also added that by getting the loan at home without onerous documentation, he has saved money. First, he must travel to Amravati for various documentation at least three to five times in

order to obtain any loan from the bank. A round-trip fare, including food cost, is at least Rs 200. Four visits result in a total expense of Rs 800.

More importantly, if similar loan is of Rs 30,000 is availed from any non-institutional sources like money lender or local agri input dealer, then the interest rate prevalent is around 30 - 40 percent which comes roughly to Rs. 9,000 - 12,000/-. It varies according to the need of the farmer and from place to place.

Now comparing the interest rate levied by DER which is 24 percent, Gopal Bahe saved Rs. 4,700. Additionally, if the loan has been taken from the agri input dealer, then he has to purchase various agri inputs on marked-up price from the same dealer. Similar inputs are available in his FPC on much lower price.

Loan amount through FPC	FPC Interest Rate	Interest amount	Interest Rate Non-Institutional Source	Interest amount	Saving	Saving in Percentage
Rs. 30,000	24%	Rs 4,300	30%	Rs 9,000	Rs 4,700	47.8%

b. Input Purchase: Gopal Anurao Bahe has purchased Soyabean seed, Cotton seed and spray pumps from his FPC. Each of these products have been offered to him at lower price in comparison to market offered price. The price comparison and savings made are as follows:

Product	Quantity	Unit	Market Price Per Unit	FPC Price PerUnit	Saving in percentage	Average saving
Soybean seed	30	Kgs	Rs. 3,400	Rs. 3,200	7.4%	8.1%
Cotton seed	450	Gram/s	Rs. 810	Rs. 750	10.9%	
Spray pump	2	Number	Rs. 3,200	Rs. 2,850	5.9%	

c. Output Sale: Gopal Anurao Bahe got additional earning of 13 percent from the sale of his Bengal Gram crop through FPC. It was a NAFED acquisition. Here are the specifics:

Product	Quantity	Unit	Market Price Per Unit	FPC Price Per Unit	Saving in percentage
Bengal Gram	28	Quintal	Rs. 4,550	Rs. 5,230	13%

d. Soil Testing – As mentioned above, Gopal Bahe has got the soil testing done on July 8th, 2022. He will be able to comment on the increase in production or quality of produce of his Soyabean and Cotton crop in November and February respectively, when the harvest is ready. He added that by reducing the unnecessary usage of agricultural inputs, particularly fertilisers, he is able to save costs while simultaneously improving production in the long run. Through the table below, it could be assessed that what has been recommended to him through the soil test, what he is currently practising in his soil and how much cost, he will be saving in future, if he follows the recommendations. The details are as follows:

Recommendation from soil test		Prevalent	Rate	Cost as per prevalent Practice	Cost as per recommen-dation	Savings in percentage	Savings in percentage
DAP	6 bags and 2.5 kgs	7 bags	1350/bag	Rs. 9,450	Rs. 8,168	Rs 1,283	13.6%
MOP	1 bag and 42.5 kgs	2 bags	1700/bag	Rs. 3,400	Rs. 3,145	Rs 255	7.5%

e. Customised crop advisories and weather forecast: Gopal Anurao Bahe regularly receives these advisories and as per him, it helps him to take weather sensitive decisions like sowing/transplanting of crops, pesticide and fertilizer application. He said that even though he and other farmers could benefit from the advice even if he already knew most of the information due to his expertise as a farmer.

f. Mandi price information: Gopal Anurao Bahe opined that mandi price information that is provided through the application is one of the best features of this Krishak application as they can get the information every day on various crop prices from multiple mandis. Earlier he used to access price information mandi officials, friends and relatives. He said that he can compare the various prices quoted to him by FPC, middleman while sitting at home.

“सर्व सदस्यांनी आपला वेळ आणि योगदान यात वाटून घेतल्यास **FPC** हे एक अतिशय फलदायी पाऊल ठरू शकते. ही सुरुवात असल्याने मला असे म्हणायचे आहे की मला एफपीसीचे बरेच फायदे झाले आणि मी सतत अधिकाधिक शेतकऱ्यांना एफपीसीमध्ये जोडत आहे.”

“If all the farmers contribute their time and participate actively in FPC then it will prove to be a beneficial venture for the farmers. This is the starting phase, still I would say that I have benefitted a lot being shareholder in my FPC and I am making efforts to add other farmers to the FPC”