Assessing the State of Affairs in Indian Agriculture with a Focus on Credit & Insurance and Storage & Marketing

Nation First Policy Research Centre, Rambhau Mhalgi Prabodhini, Mumbai

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DISCLAIMER

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About NABARD Research Study Series

The NABARD Research Study Series has been started to enable wider dissemination of research conducted/sponsored by NABARD on the thrust areas of Agriculture and Rural Development among researchers and stakeholders. The current study titled 'Assessing the State of Affairs in Indian Agriculture with a Focus on Credit & Insurance and Storage & Marketing' completed by Nation First Policy Research Centre, Rambhau Mhalgi Prabodhini, Mumbai is the forty-first in the series.

Since Independence, agriculture has played a pivotal role in shaping our country's economy. Over the past 75 years, India has become self-sufficient in agriculture production and top producer for various commodities like rice, wheat, fruits and vegetables, milk, poultry, among others. However, issues of lack of access to credit and finance, small landholdings, traditional farming practices, inadequate agricultural infrastructure, market volatility, water scarcity, inadequate irrigation, and climate change prevent the sector from achieving its true potential. Another major concern in agriculture includes empowering farmers with robust backward and forward value chain integration, greater market access and higher bargaining power.

Given the complexity of dynamics in the agriculture sector in India coupled with the rapid technological changes taking place in areas related to credit, insurance, storage, and marketing, the study attempts to provide a first-hand account of the farmers' experience on the ground. The study aims to determine whether there is a disconnect between the actual needs of farmers and farmers' perceived views on efficacy of schemes through robust research and in-depth ground-level investigation.

Hope this report would make a good reading and help in generating debate on issues of policy relevance. Let us know your feedback.

Dr. KC Badatya
Chief General Manager
Department of Economic Analysis and Research
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<tr>
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<td>AMI</td>
<td>Agricultural Marketing Infrastructure</td>
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<td>AMIGS</td>
<td>Agricultural Marketing Infrastructure, Grading and Standardization</td>
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<td>APMC</td>
<td>Agricultural Produce Marketing Committee</td>
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<td>CACP</td>
<td>Commission for Agricultural Costs and Prices</td>
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<td>CCRF</td>
<td>CDSL Commodity Repository Limited</td>
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<td>CWC</td>
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<td>CCIS</td>
<td>Comprehensive Crop Insurance Scheme</td>
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<td>DCCB</td>
<td>District Central Cooperative Bank</td>
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<td>DDM</td>
<td>District Development Manager</td>
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<td>DLTC</td>
<td>District Level Technical Committee</td>
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<td>EMI</td>
<td>Equated Monthly Instalments</td>
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<td>e-NWR</td>
<td>Electronic Negotiable Warehouse Receipt</td>
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<td>FCI</td>
<td>Food Corporation of India</td>
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<td>FAO</td>
<td>Food and Agricultural Organization</td>
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<td>FGD</td>
<td>Focus Group Discussions</td>
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<td>FPO</td>
<td>Farmer Producer Organizations</td>
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<td>GBY</td>
<td>Gramin Bhandaran Yojana</td>
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<td>GLC</td>
<td>Ground Level Credit</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>GOI</td>
<td>Government of India</td>
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<td>GVA</td>
<td>Gross Value Added</td>
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<td>IS</td>
<td>Interest Subvention</td>
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<td>ISAM</td>
<td>Integrated Scheme for Agricultural Marketing</td>
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<td>IT</td>
<td>Information Technology</td>
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<td>JLGs</td>
<td>Joint Liability Groups</td>
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<td>KCC</td>
<td>Kisan Credit Card</td>
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<td>LDM</td>
<td>Lead District Manager</td>
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<td>LPC</td>
<td>Land Possession Certificate</td>
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<td>LAMPS</td>
<td>Large Sized Agricultural Multi-purpose Cooperative Societies</td>
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<td>MFI</td>
<td>Micro Finance Industry</td>
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<td>MNAIS</td>
<td>Modified National Agricultural Insurance Scheme</td>
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<td>National E-Repository Limited</td>
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<td>NDAP</td>
<td>National Data and Analytics Platform</td>
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<td>NPA</td>
<td>Non-Performing Asset</td>
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<td>NSSO</td>
<td>National Sample Survey Office</td>
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<td>PDS</td>
<td>Public Distribution System</td>
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<td>PEG</td>
<td>Private Entrepreneurs Guarantee</td>
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<td>PACS</td>
<td>Primary Agricultural Credit Societies</td>
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<td>Acronym</td>
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<td>PCIS</td>
<td>Pilot Crop Insurance Scheme</td>
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<td>PMFBY</td>
<td>Pradhan Mantri Fasal Bima Yojana</td>
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<td>PMJBY</td>
<td>Pradhan Mantri Jeevan Jyoti Bima Yojana</td>
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<td>PM-KISAN</td>
<td>Pradhan Mantri Kisan Samman Nidhi</td>
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<td>PMKSY</td>
<td>Pradhan Mantri Krishi Sinchai Yojana</td>
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<td>PMSBY</td>
<td>Pradhan Mantri Suraksha Bima Yojana</td>
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<td>PRI</td>
<td>Prompt-Repayment Incentive</td>
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<td>PPP</td>
<td>Public-Private Partnership</td>
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<td>PSL</td>
<td>Priority Sector Lending</td>
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<td>PSB</td>
<td>Public Sector Banks</td>
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<td>RIDF</td>
<td>Rural Infrastructure Development Fund</td>
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<td>RBI</td>
<td>Reserve Bank of India</td>
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<td>RWBCIS</td>
<td>Restructured Weather Based Crop Insurance Scheme</td>
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<td>RPMs</td>
<td>Regional Rural Banks</td>
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<td>RPM</td>
<td>Rural Periodic Markets</td>
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<td>SAS</td>
<td>Situation Assessment Survey</td>
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<td>Scheduled Commercial Banks</td>
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<td>Small finance Banks</td>
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<td>Self-Help Groups</td>
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<td>State-Level Banking Committee</td>
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<td>SLTC</td>
<td>State Level Technical Committee</td>
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<td>SoF</td>
<td>Scale of Finance</td>
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<td>SWC</td>
<td>State Warehousing Corporations</td>
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<td>UIDAI</td>
<td>Unique Identification Authority of India</td>
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<td>WIF</td>
<td>Warehouse Infrastructure Fund</td>
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<tr>
<td>WDRA</td>
<td>Warehousing Development and Regulatory Authority</td>
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<tr>
<td>WBCIS</td>
<td>Weather Based Crop Insurance Scheme</td>
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Executive Summary

Agriculture is the primary source of livelihood for rural households in India. The sector has made great strides in food production and availability, credit reforms and introduction of marketing reform. However, the growth in economic progress has been stalled by inefficiencies such as small size landholdings, limited usage of farm mechanisation, excessive government control, dependence on government’s support. While India has come a long way from a food deficient and import dependent nation, the agriculture sector is yet to control volatility in food prices, promote private investment and increase farmers’ income. In particular, despite various schemes and programmes, the government’s journey towards enhancing farmers’ income has been rather difficult. This makes it imperative for a deeper examination of issues at hand.

Context of the study

A unique entry point into understanding the issues on the ground, is to gain insight into the real-life challenges encountered by farmers. This includes determining whether there is a disconnect between their actual needs and the existing scope of schemes, farmers’ perceived views on efficacy of the schemes, their trust levels with the programmes of the government and their felt needs. This can only be accomplished by gathering honest feedback from farmers. Taking their opinions into account is an essential step towards identifying the measures required to improve their economic status. Accordingly, this study attempts to conduct an in-depth assessment of the on-ground situation from farmers’ perspective through robust research and systematic ground-level investigation.

The study addresses the following gaps:

- Lack of robust on-ground information on the problems faced by farmers in India.
- Lack of empirical information or rigorously generated data on the needs, requirements, and preferences of farmers
- Inadequate feedback on farmer groups with varying socio-economic contexts on various policy frameworks that the government may have rolled out.

We have identified four topics for the study which represents crucial stages in farming, providing a comprehensive picture of the farmers' lives: (a) Access to credit, (b) Crop insurance, (c) Storage, and (d) Marketing.

Methodology

The study adopted the mixed method research methodology combining both quantitative and qualitative data for analysis of primary survey and stakeholder interviews. An extensive review of existing literature and secondary data related to government schemes and policies was done, allowing a distillation of most important schemes and programmes whose efficacy could be studied. For sampling, a district-level index was prepared based on the performance of districts on the expected amount of credit and overall yield. The relatively high performing and relatively low performing districts were clustered and one district was selected from each cluster in select states to get an
understanding at an average level, without any bias of district effects. In each of the districts chosen, a total of 1583 farmers were interviewed in the villages of all the districts chosen.

The survey was conducted across ten districts in five states:

- Assam (Dhemaji and Baksa)
- Andhra Pradesh (Krishna and Anantapur)
- Maharashtra (Nagpur and Solapur)
- Rajasthan (Pali and Churu)
- Uttar Pradesh (Meerut and Kaushambi)

Focus Group Discussions (FGDs) were also conducted in all the districts to take valuable feedback on challenges faced, assistance required from the government, and suggestions for improving income. Along with the primary survey, the team conducted interviews with various government stakeholders like State Warehousing Corporation and Agriculture Marketing Board of all five states and Lead District Manager at the district level.

Findings

While considerable state-level (and occasional district-level) disparities were evident, some general insights emerged.

Credit

- 58% of sample farmers were aware of the credit scheme. KCC scheme emerged as the most popular source of credit
- Only 28% of the total sample farmers availed credit. Farmers face several issues in accessing credit, ranging from complex procedure, distance to banks, lack of awareness and required documents. The reasons for opting for other sources of loan other than KCC were hassle-free procedures for such loan as opposed to KCC loans, apart from technical and legal hindrances for the KCC loans. Higher amount of loans was available with other sources as compared to KCC. The farmers gave reasons such as lack of awareness and difficult scheme procedures, not falling under the eligible criteria and lack of sufficient land or security for not availing credit
- 40% of sample farmers were not satisfied with the loan amount they received when compared to the expenses incurred in farming

Insurance

- 50% of sample farmers were aware of some crop insurance scheme
- Farmers do not consider it beneficial to avail scheme due to low claim/settlement ratio, delay in getting compensation/timely financial assistance, and inaccurate assessment of crop losses
- 26% of sample farmers were availing PMFBY, while only about 10% of the respondents from total sample who are availing the scheme made insurance claim for crop loss
- Lack of prior knowledge and technical hindrances are the most frequent challenges in the application process of PMFBY
• The farmers gave reasons such as lack of funds and complicated process. Their dominant perception is that the insurance policies/companies are not in their favour and that they will not benefit from the scheme of crop insurance.

• Surveyed farmers in states like Andhra Pradesh and Rajasthan have used the crop insurance much more compared to other states. In both states, awareness level is high due to the concerted efforts of local authorities and state government. Additionally, the crop loss determination and claim settlement process is better and transparent which extends the benefit of crop insurance to farmers.

Storage
• 30% of total respondents were aware of storage schemes. Only 4% of respondents were aware of Negotiable Warehousing Receipts (e-NWR).
• e-NWR usage is low as farmers are unaware of the advantages of this facility, they lack the resources to go through the process to generate profits, and they have immediate requirement of money after harvest.
• 36% of surveyed farmers are storing their produce. Among this, 7% of the farmers used government storage facilities, 27% of the farmers store in private storage and 66% stored their produce in their own storage units.
• The farmers gave reasons such as distress sale for immediate requirement of money and unaffordable storage charges for not storing their produce.

Marketing
• 17% were aware of marketing schemes and only 5% of respondents were aware of e-NAM.
• The farmers faced issues such as distance and lack of access to transport facilities while taking produce to mandis. Surveyed farmers also said that they do not prefer selling in APMC mandis due to longer waiting period for sale of produce, high commission charges, low profits and delayed payment, and lack of storage.
• Almost 76% of sample farmers did not receive MSP.
• 43% of the farmers sold their produce for lower prices than the expenses incurred in cultivation. It was found that selling their produce at a discount was to cover an immediate financial necessity.
• 46% of the surveyed farmers believed that middlemen, or arhatiyas, strongly influence their choices and the prices of produce. The influence of intermediaries also extends to the market choices of farmers, such as the type of products and pesticides used.
• Massive information asymmetry among farmers about the online trading platforms as majority of sample farmers said that they had no knowledge of online transaction process and they found the process cumbersome and lack of trust in digital technology. 30% of the respondents indicated that they would be open to selling their produce on online markets like e-NAM.

Perceived needs and opinion of farmers
• High input prices, low prices for their crops, low access to credit and the existence of middlemen were major problems highlighted by farmers. According to the farmers, they require assistance from government in terms of:
Improving access to financing through flexible procedures, bigger loans and reduced interest rates,
appropriate supply of high-quality inputs and irrigation facilities,
storage facilities.

- Around 43% of farmers in the sample indicated they are willing to take long-term loans from institutions like the KCC scheme, the Agri Infrastructure Fund, or the Agricultural Marketing Infrastructure (AMI) for investors to raise their income and crop productivity.
- Majority of the farmers said they could increase their income by boosting crop productivity, switching to different crops and by working with animals or poultry.
- More than half of the respondents (56%) opined that sowing cash crops such as vegetables, pulses, and oilseeds would increase their income.
- Farmers have a significant knowledge gap about the benefits of storing their produce and using e-NWR receipts. Stakeholder interviews emphasised the importance of building more storage facilities near farms so that farmers do not have to worry about their location or a lack of supply.

Policy Recommendations

One of the most important discoveries was that a range of government schemes had responses to much of the farmers’ felt needs. Yet, the gap was apparent. The data revealed that there was hardly a significant need for creating a new policy or programme, but what is needed, is optimization, enhancement and more efficient disbursement of schemes to the farmers. As a majority of land holdings (i.e., 86%) in the country are small and marginal, a bulk of farmers face issues such as low and intermittent income, inadequate know-how on marketing, value addition and technology integration, among others. Some of the policy recommendations discussed in detail in the Report are as follows:

- Creating a digital farmers stack, and integrating all the schemes at individual farmers’ level. Additionally, creating a bundled package of many complementary schemes.
- Riding on state-level programmes which are successful, since they have better sense of targeting the farmer-population,
- Conducting routine trust-building drives, involving design students (for messaging) and Nehru Yuva Kendra volunteers in the village,
- Simplifying many procedures, in particular, streamlining and making navigation simple on government websites and apps,
- Delivering technological and financial literacy training, using school and college children in villages and towns,
- Building more storage infrastructure, including incentivising for more private participation.
Chapter 1: Introduction

1.1 Agriculture in India

Over the past 50 years, India has transformed from a country that relied on food aid to one that exports food. Although food grains and oilseeds still account for 80% of the country’s cropland, India has also become the world’s top producer of milk, pulses, horticulture, livestock, shrimp, and spices. Agriculture has long been the backbone of the Indian economy, harnessing nearly 50% of the nation’s workforce and contributing to approximately 20% of its GDP (Economic Survey 2021-2022). Even though this sector needs more improvement compared to the other industries towards GDP contribution, it has shown much resilience, even in withstanding the catastrophic effects that the Covid-19 pandemic has had on the entire country (Chandrashekhar and Ghosh 2021). Agriculture was the sole industry to generate a growth of 3.6% in the Gross Value Added (GVA) for 2020-21. When other nations were storing food at a higher price in anticipation of the Covid-19 waves, India was not only at ease with public cereal reserves that were 2.8 times the buffer standards but were also exporting agricultural goods. (Chandrashekhar and Ghosh 2021). These statistics are one of many reasons that imply that our country’s agriculture sector holds the potential to mitigate the challenges of the sector.

India has achieved various milestones in terms of its agriculture achievements. India’s grain productivity has increased steadily since the green revolution over the decades (barring the early 2000s). In the last decade, India witnessed increased average productivity of foodgrains with factors such as increased agriculture credit, public and private investments, and technological advancements such as high-quality seeds and irrigation facilities (Chand and Parappurathu 2012). Another achievement during this period was the success of producing horticulture crops. In recent years, the farmers have diversified their production into horticulture crops, and expanding not just in terms of productivity like in the case of grains but also in terms of area (RBI 2022).

Also, to be treated as an achievement is the growing popularity of allied agriculture activities such as livestock and dairy farming that has gained popularity over the last decades. As per GoI (2019) India emerged as the world’s foremost producer of dairy, eggs and meat with the livestock sector achieving a remarkable growth of 6.6% during the last decade. Additionally, with the decreasing land size for farming emerging as a challenge in recent times and the challenges faced by landless farmers these allied activities can act as a sustainable source of income generation for the farmers.

Lastly, one should also recognize India’s progress in agriculture trade over the decade. India managed to become one of the major producers of many agricultural products and also became one of the world’s leading exporters of agriculture products as the export grew by 19.9% in 2021-22 (Ministry of Commerce & Industry 2022).

Given the sector’s accomplishments to date, it is crucial to comprehend the significant growth enablers that have contributed to its expansion. Food productivity, farm mechanization and growing irrigation coverage are the three main growth enablers that have increased food productivity (RBI
The usage of advanced high-quality seeds, scientific research and usage of fertilizers are recognized as some of the reasons that have enabled this growth in the productivity of foodgrains (Chand, Kumar and Kumar 2012). In addition, easier access to lending policies and irrigation infrastructure enables farmers to obtain resources like high-quality seeds, irrigation, and other inputs that can raise farm productivity which has the potential to increase agricultural productivity by 30% while lowering input costs by 20%. (NABARD 2018). India has made headway toward achieving irrigation facilities and has assisted farmers in battling adverse weather shocks like drought, etc. The usage of micro irrigation (sprinkler and drip irrigation) has drastically grown since the launch of the Pradhan Mantri Krishi Sinchai Yojana (PMKSY) in 2015–16, ensuring water use efficiency at the farm level.

Despite the promise, India’s agricultural industry still needs to be improved significantly (International Fund for Agricultural Development 2022). Although India has seen growth in farm mechanization over the years as it cuts down on labour requirements and the time needed for farm tasks, it is crucial to highlight that despite an increase in the purchase and use of tractors, other types of machinery like transplanters and power tillers have not seen a significant increase (FICCI 2017) Despite a consistent growth in irrigation, India’s irrigated territory is still just 34.4%, which is less than the country’s wholly unirrigated area, which is 38.6% (RBI 2022). Even when all these holds true and India has been growing positively over the years in all the segments discussed above, when it comes to relative comparison of India with the rest of the world, these performances are much lower than other countries. Put differently, although India has excelled in the agricultural industry throughout the years, a few obstacles need to be overcome to progress further. While challenges like climate change, and lack of proper agriculture waste management act as considerable risks for the growth of agriculture production, other challenges such as an increase in fragmented land holdings and disguised labour, act as roadblocks to the potential growth of the agriculture sector.

Poor productivity faced by the farmers, constant challenges of water shortages, climate changes accompanied by the fragmented landholdings which prevents the small landholding farmers to come out of the clutches of poverty and improve their living standards are some of the attributes of the sector’s inefficiencies. Farmers in rainfed areas, landless labourers, and women are among the most vulnerable populations to the effects of climate change, with wages estimated to drop by 20–25% (Economic Survey 2017-2018). Although India has managed to reduce poverty substantially over the years, it still has one of the highest proportions of poor population in the world, and many rural poor consist of marginal smallholder farmers and rural landless people from scheduled castes, tribes, and other vulnerable groups (International Fund for Agricultural Development 2022). 86% of the farmer population of India are categorized as small or marginal farmers as they operate in a land area of fewer than 2 hectares (Ministry of Agriculture & Farmers' Welfare 2020 a.). Given their size in farming population, it can be stated that edging towards the growth and development of agriculture will depend on the growth and uplifting of the small and marginal farmers. While they form the most significant percentage of the total land holding in India, their operated land area accounts to only 47% (Ministry of Agriculture & Farmers' Welfare 2020 a.) indicating a noticeable land inequality in India.

Small, landless farmers and sharecroppers find it difficult to avail loans individually. Therefore, they
form Joint Liability Groups (JLGs), where, as per eligibility, members who have defaulted in any other formal financial institution in the past are debarred from the group membership. Furthermore, small farmers who cannot prove the right to operate or cultivate land often need help to avail loan facilities under the Kisan Credit Card (KCC) scheme. The lack of credit pushes farmers towards informal sources and a consequent debt trap, making investing in mechanization and storage complex. This also creates a need of a well-functioning insurance system. However, accessibility issues, lack of will amongst private participants and restrictive implementation of crop-insurance schemes have deterred both farmers and state governments. Storage and marketing are other big problems of the sector. A considerable gap is seen between the existing infrastructure facilities and the potential requirement of storage/marketing infrastructure. A major concern in agriculture is empowering farmers with greater market access and linkage to achieve better value realization (NCCD 2015). Therefore, a farmer’s produce must be integrated into the following value chain segment by scaling up post-harvest operations, transport, storage, and value-added processing. Additionally, it should involve establishing marketing linkages beyond the local mandis/markets and reducing post-harvest losses.

Each of these problems are compounded through a range of external variables. That is why, the policy focus needs to juggle between productivity (food security), consumer surplus (low food prices), and farmer welfare (farmers’ income), where each of the three often interplay with each other. Recently, the government of India has begun focusing on the third element, namely, farmers’ income which is a welcome step. It is in this context, that perhaps one of the best ways to understand the problem contextually, is to engage with farmers themselves. Also, this investigation must be geared towards exploring their felt-needs in the four dominant variables that affect farmers’ livelihoods, namely, credit, insurance, storage and marketing.

1.2 Why this study?

Accordingly, a need arises to understand the issues of farming community, from the farmers themselves. In other words, given the complexity of dynamics in which agriculture sector in India is, coupled with the rapid changes taking place in various technological types in areas related to credit, insurance, storage, and marketing, it was felt that a first-hand account of the farmers will aid in greater understanding of the issues on the ground, and sculpture informed judgment.

Therefore, this study attempts to understand the needs and pain points from farmers’ perspective, assess the existing policies and support from the government, and discuss with the major stakeholders in farming to evaluate the state of affairs in agriculture. This study intends to take a real-time stake in the challenges that the farmers face today related to credit, insurance, storage and marketing. In this study, we focus on the small and marginal farmers’ accessibility to credit and insurance, which are extremely important to uplift themselves from poverty by investing in income generating activities that ensure agricultural development. Insurance will provide a cushion to the farmers in case of natural disasters like floods, earthquakes, droughts, and effects of climate change or losses due to pandemics as witnessed in recent times. Marketing and storage of the agricultural produce by the farmers are the other aspect of agriculture that the study will focus upon. Small and marginal farmers face multiple of challenges in storing and selling their produce affecting their bargaining power in
getting remunerative prices. Direct access to markets and adequate market infrastructure are major requirements to improve agriculture as an enterprise, help farmers gain profit and improve their living standards with ensured food and financial security, health, and education accessibility.

The gaps that the research tries to address include the following:

- Lack of robust on-ground information on the problems faced by farmers in India
- Lack of empirical information or rigorously generated data on the needs, requirements, and preferences of farmers
- Inadequate feedback on farmer groups with varying socio-economic contexts on various policy frameworks that the government may have rolled out.
In terms of market dynamics, changing weather conditions and emerging technologies, the agriculture sector in the country since independence, has witnessed multiple shifts in policy approaches for farmers’ welfare and addressing rising challenges. Therefore, it is imperative to look at the schemes and policies run by the government and analyse their implementation to assess the support provided by the government and discover the impact on the farmers. The central focus of this chapter is to analyse the progress of major schemes from existing government data and evaluate the conditions of farmers based on major determinants from the Agriculture Census and Situation Assessment Survey (SAS) of Agricultural Households, NSSO.

2.1. Background

This section discusses and analyses the total number and average size of land holdings, trends in income and disparity among farmers according to the land size to obtain a brief understanding of the farmers’ current scenario. This will allow a more comprehensive understanding of the ecosystem under which issues related to credit, insurance, storage and marketing could be examined.

Most land holdings (i.e., 86%) in the country are small and marginal (below 2 ha.) (Agriculture Census, 2015-16), which means that for every ten agricultural households, nearly nine are owned as small landholdings of up to 2 hectares. Of approximately 172 million rural households in the country, about 93 million, i.e. 54 %, is identified as agricultural household (NSSO 2019). If we look at land holding size owned by these households, the survey states that around 70% of agricultural household possessed land less than 1 ha and only 0.4% agriculture households possessed more than 10 ha, while 8% of rural households are landless. According to the Agriculture Census report of 2015-16, the total number of operational land holdings in India was estimated to be 146.5 million, and the total area was 157.8 million ha. Out of this, 126 million ha. of holdings belong to small and marginal farmers.

The prevalence of fragmented land size poses a severe constraint for sustained viable income for this group of farmers. Farm holdings that are dispersed and fragmented make it difficult for farmers to embrace new technologies and use farm resources efficiently, which lowers economic production. Additionally, this prevents farmers from diversifying their businesses, which is thought to be a critical step in increasing their income. A study by Chand et al. (2011) indicates that the lower the size of holding, the higher the use of inputs, crop intensity and coverage under High Yield Varieties (HYVs) crop, reflecting technology. Higher productivity would arise from greater use of these elements, and farm categories with better values of these factors are likewise anticipated to experience higher production. The findings showed that the relationship between farm size class and land productivity was inversely proportional.

The share of small and marginal farmers in the number of holdings is increasing as the average size of land holdings has declined simultaneously over the years. As figure 2.1 shows, between 1970-71 and 2015-16, the average farm size declined by 52% from 2.28 ha to 1.08 ha. The decreasing average size of landholdings is one of the primary reasons for distress in agriculture sector, as the land size is
insufficient to provide a sufficient livelihood for families. Research shows that geographically also, approximately 80% of the low-income marginal farmers are concentrated in the eastern (58%) and western (21%) regions (Chahal 2018), pointing out the inherent structural weakness in the agriculture sector could also be regional in nature, posing policy conundrums for the agricultural economy that leads to geographic disparity in its performance.

**Figure 2.1 Average landholding size throughout the years**

<table>
<thead>
<tr>
<th>Year</th>
<th>Average size of holdings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970-71</td>
<td>2.5</td>
</tr>
<tr>
<td>1976-77</td>
<td>1.5</td>
</tr>
<tr>
<td>1980-81</td>
<td>1.0</td>
</tr>
<tr>
<td>1985-86</td>
<td>0.5</td>
</tr>
<tr>
<td>1990-91</td>
<td>0.25</td>
</tr>
<tr>
<td>1995-96</td>
<td>0.2</td>
</tr>
<tr>
<td>2000-01</td>
<td>0.1</td>
</tr>
<tr>
<td>2005-06</td>
<td>0.05</td>
</tr>
<tr>
<td>2010-11</td>
<td>0.01</td>
</tr>
<tr>
<td>2015-16</td>
<td>0.005</td>
</tr>
</tbody>
</table>

**Table 2.1 Average monthly income (Rs.) from different sources per agricultural household during July 2018 - June 2019 for each size class of land possessed (ha.)**

<table>
<thead>
<tr>
<th>Size class of land possessed (ha.)</th>
<th>Income from wages</th>
<th>Income from leasing out of land</th>
<th>Net receipt from crop production</th>
<th>Net receipt from farming of animals</th>
<th>Net receipt from non-farm business</th>
<th>Total income</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 0.01</td>
<td>6,435</td>
<td>254</td>
<td>1,660</td>
<td>2,084</td>
<td>772</td>
<td>11,204</td>
</tr>
<tr>
<td>0.01 - 0.40</td>
<td>4,491</td>
<td>189</td>
<td>977</td>
<td>1,162</td>
<td>703</td>
<td>7,522</td>
</tr>
<tr>
<td>0.40 - 1.00</td>
<td>3,906</td>
<td>76</td>
<td>2,683</td>
<td>1,335</td>
<td>570</td>
<td>8,571</td>
</tr>
<tr>
<td>1.01 - 2.00</td>
<td>3,647</td>
<td>74</td>
<td>5,269</td>
<td>1,845</td>
<td>613</td>
<td>11,449</td>
</tr>
<tr>
<td>2.01 - 4.00</td>
<td>3,548</td>
<td>146</td>
<td>9,432</td>
<td>2,551</td>
<td>758</td>
<td>16,435</td>
</tr>
<tr>
<td>4.01 - 10.00</td>
<td>4,273</td>
<td>451</td>
<td>19,645</td>
<td>3,451</td>
<td>472</td>
<td>28,292</td>
</tr>
<tr>
<td>10.00 +</td>
<td>3,943</td>
<td>581</td>
<td>43,599</td>
<td>11,473</td>
<td>1,162</td>
<td>60,758</td>
</tr>
<tr>
<td><strong>All sizes</strong></td>
<td><strong>4,063</strong></td>
<td><strong>134</strong></td>
<td><strong>3,798</strong></td>
<td><strong>1,582</strong></td>
<td><strong>641</strong></td>
<td><strong>10,218</strong></td>
</tr>
</tbody>
</table>

The average income of small and marginal farmers (up to 2 ha.) is comparatively meagre as compared to medium and large farmers (>4 ha). Therefore, monthly income data from different sources per agricultural household shows a direct relation between the size of land possessed and the total income of the agricultural households. The share of wage income is higher among small and marginal farmers than among large farmers, as higher the land size, the higher income of the household. The average monthly income per agricultural household as per NSSO (2019) is Rs. 10,218, which consists of 40% wages, 37% crop production, 15% farming of animals, 6% non-farm business and 1.3% leasing-out of land. There is a nominal increase of 59% in the income of agricultural households from the last NSSO survey conducted in 2013, from Rs. 6,424 to Rs. 10,218 in 2019 (see table 2.1). The share of income from crop production of agriculture households is lower among small and marginal farmers than medium and large farmers.

The income of farmers or agricultural households’ income directly depends on the prices farmers receive for their crops. The lack of remunerative prices or access to a larger market or other reasons account for the slow economic growth of farmers or the agriculture sector at large. From another perspective, to look at farmers’ income, Chand (2015) estimated farm income trends over the decades compared with the income of non-agriculture sector. He observed a stark difference in a worker’s income growth in the agriculture and non-agriculture sector. A farmer in an agriculture household earned one-third of the income of a non-agriculture worker; this is apparent from the growth rate of farm income over the years i.e., 3.3% in the period 1993-94 to 2004-05 and growth of 5.4% in the period 2004-05 to 2011-12. In another paper, Chand (2016) attributes the agrarian distress in the country to the widening gap between growth rate and income generated per worker between agricultural and non-agricultural sectors.

Most farmers in the country suffer from low scale, low productivity, weather, and market risks. Factors such as land size and usage of inputs determine the productivity and income of farmers. As we observed, small and marginal farmers are disadvantaged due to the factors which is reflected in their income. To provide the farmers with the capacity to generate higher incomes and profits, the government has been making timely and regular interventions in the agriculture sector through various policies specific to different segments of agriculture, viz. credit, insurance, storage, and marketing. Over the years, specific schemes have been designed for the betterment of farmers. The next sections give an overview of the status and progress of the major schemes.

2.2 Overall progress of major schemes

2.2.1 Credit

In India, rural debt and reliance on private moneylenders are perennial issues in agriculture. Since independence, the government and the Reserve Bank of India (RBI) have been working to increase institutional credit in rural areas, primarily to support agricultural operations. The government has launched several policy initiatives to increase farmers’ access to institutional sources of financing. These policies have been designed to gradually institutionalise prompt and adequate credit support
for all farmers, focusing on small and marginal farmers and the most vulnerable groups in society, enabling them to provide liquidity cushion, as well as to adopt technology and more productive farming methods that will increase agricultural output. Indeed, the Indian agri-credit system has advanced admirably, with significant policy interventions and modifications by the government through policies and schemes designed to improve the sector for decades.

Agricultural credit policies in India are primarily supply-driven and are executed through targeted ground-level lending, interest subvention programme, and directed lending by regulatory prescription per Priority Sector Lending regulations (RBI, 2019). In the agricultural finance, these initiatives, along with other government and RBI policy interventions, have produced commendable results. The policies focus on improving credit flow at the local level through credit planning, the implementation of region-specific initiatives, and the streamlining of lending policies and procedures. These legislative developments have increase percentage of rural families with institutional credit. Nevertheless, there are still problems with the agricultural sector, such as a lack of capital formation, regional disparity, the and the reliance of farmers, especially small and marginal farmers, tenant farmers, landless labourers, and sharecroppers, on non-institutional sources of credit at significantly higher rates, the failure to realise the fair price for agricultural produce that results in farmers’ distress, and farm loan waivers that have an impact on credit culture and weak credit standards (Gulati and Juneja 2019).

2.2.1.1 Operational landholders availing institutional credit

*Figure 2.2: Number of households availing institutional credit*

Source: MoAFW (Ministry of Agriculture and Farmers Welfare 2022)
From figure 2.2, the land holdings below 2 hectares of land categorized together as small and marginal farmers had the highest proportion of landholders who availed institutional credit and constituted approximately 60% of the total institutional credit taken by the landholdings. The same may also mean that they are the neediest for institutional credit compared to other farmers’ segments explaining one of the reasons why institutional credit policies are designed to favor the small and marginal farmers to some extent. For instance, under the Flexi-KCC in the KCC scheme, a farmer can avail credit up to 50,000 based on the assessment of the bank managers irrespective of the land value. Also, in the same KCC scheme, no farmer must give collateral for availing up to 1.6 lakhs of KCC loan.

2.2.1.2 Indebted households

According to the 2019 NSSO survey report, 50% of agriculture households were indebted, meaning that nearly half of the total agriculture households in India have taken credit. Figure 2.3 depicts the various states’ percentage of indebted agriculture households. Andhra Pradesh, Telangana, Kerala, Karnataka, and Tamil Nadu are the top five states having the highest percentages of indebted agriculture households, followed by Odisha, Rajasthan, Punjab, Maharashtra, and West Bengal. In the same report it is stated that rural India saw a more significant percentage of indebtedness at about 35% compared to urban India with 22% of indebtedness. Also, around 18% of the rural households were indebted to institutional credit agencies, whereas 10% were indebted to non-institutional sources. Adding to this, it also says that in urban India, the percentage of households taking institutional credit was less than the rural households at 14.5%, but the percentage of households that took loans from non-institutional credit agencies was lesser in urban households at 4%. Furthermore, approximately 7% of the households were indebted to formal and informal credit systems in rural India, against 3% of households in urban India.

Multiple determinants of accessing agriculture credit differ according to the land size of agriculture and their economic condition. Small and marginal farmers generally take loans to mitigate the shocks from crop failure, pest infestation, price shocks, floods, and disease. The economically better-off farmers are optimizing their resources and utilizing credit to make a capital expenditure in productive assets and enhance their productivity compared to agriculture households with smaller sizes (NABARD 2016-17). Therefore, there is a positive correlation between the tendency to seek loans and the consumption expenditure class of households. Lack of repayment capacity is one of the foremost reasons for keeping small farmers away from this institutional credit source. Access to institutional credit for small and marginal farmers is an enormous issue affecting the sector leading to indebtedness at a large scale. In the same way, the share of capital and revenue expenditure in the farm business is higher for large farmers than for small and marginal farmers (NSSO 2019).
2.2.1.3 Loan outstanding in institutional and non-institutional sources

Figure 2.4 below indicates the percentage of outstanding loan taken from institutional sources across India of which, scheduled commercial banks have the largest share of 70%, implying that around 30% resorted to non-institutional sources for their credit requirements. Figure 2.5 below depicts the proportion of loans outstanding from non-institutional sources of credit taken. The major source of non-institutional credit is found to be professional money lenders, emphasizing the active presence of moneylenders as an option among the agricultural households as a possible solution to their credit problems.
The problems with the farmers approaching money lenders for credit has been debated and discussed for decades, and even though the governments over the years have tried to come up with programmes and scheme to inculcate institutional credit system among the farmer households, it can be said that these programs have not been able to achieve the 100% of their aim. Nevertheless, it is vital to recognize the progress made all these years and the farmers that have benefitted from all these schemes and policies.

### 2.2.1.4 Ground-Level Credit Policy

In 2003–2004, the Union Government implemented the Ground Level Credit (GLC) policy. According to this program, the government sets GLC targets established by region, agency (SCBs, RRBs, and cooperative banks), and loan category (crop and term loan) for the agricultural sector and related sectors each year in the Union budget, which banks must meet during the fiscal year.
The Ground Level Credit (GLC) to agriculture has increased significantly over the past few years and has consistently exceeded the overall targets. GLC’s revenue roughly doubled from Rs.7.30 trillion to Rs.13.92 trillion between 2013 and 2019-2020 (Ministry of Agriculture & Farmers Welfare 2021) also where the percentage of term loans in the total GLC rose from 24.95% to 40.5% (ibid.). Continuously raising the percentage of term loans is resulting in the much-needed expansion of agricultural capital formation, boosting agricultural production.

Indian agriculture is dominated by small and marginal farmers, whose numbers have increased by a staggering 156% from 491 lakhs in 1970–1971 to Rs. 1,260 lakhs in 2015–16. From 2010–11 to 2019–20, small and marginal farmers’ GLC increased by roughly 17.8%. The percentage of GLC given to small and marginal farmers to the total GLC increased from 35% to 52% between 2010–11 and 2019–20. A target of Rs. 16.50 lakh crore was set for 2021–2022, considering the performance under GLC flow from 2013–2014 to 2020–21 (Ministry of Agriculture & Farmers Welfare 2021), which was also achieved.

Under the Interest Subvention Scheme (ISS), which allows farmers to receive short-term crop loans up to Rs.3 lakhs at an interest rate which is 2% points less than the prevailing interest rates. For instance, if farmers are initially offered a 7% crop loan, an interest subvention of 2% lowers the effective interest rate to 5%. (This interest subvention under the Kisan Credit Card Scheme has been reduced to 1.5% by the government this year.)

All these facts and the actions taken, including raising the Ground Level Credit Target to Rs. 16.5 lakh crore has strengthened the efforts to provide farmers with concessional institutional credit and undoubtedly help double their income by lowering the cost of credit. These farmers could in developing and modernising their farming businesses with access to reasonable bank finance. One of the key elements that enabled the agricultural sector to emerge as a bright spot even during the pandemic times was the impact of sustainable expansion in agriculture credit.

### 2.2.1.5 Priority Sector Lending

The Indian government and the RBI define priority sectors as those that they believe should be prioritised over other businesses since they are essential to expanding of the country’s core needs. The banks are obliged to support the development of these sectors with adequate and timely credit (Chakrabarty 2012). One of the nine sectors that qualify for priority sector funding is agriculture. Priority Sector Lending (PSL) guidelines from the RBI were modified in 2020 emphasising fair development more strongly and aligning with new national priorities. The PSL regulations were recently reviewed for commercial banks in April 2015 and urban cooperative banks (UCBs), in May 2018. Farmers Producers Organizations (FPOs) that participate in farming with guaranteed marketing of their produce at a predetermined price are given a bigger credit limit, one of the primary rules of the amended PSL (RBI 2020). As per the new guidelines of RBI, 2020, lending to the agriculture sector is given in the table 2.2:
<table>
<thead>
<tr>
<th>Table 2. Various credit facilities available under PSL in agriculture sector</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Farm Credit to individual farmers</strong></td>
</tr>
</tbody>
</table>
| • Crop loans: traditional/non-traditional plantations, horticulture, and allied activities.  
• Medium and long-term loan: agriculture and allied activities  
• Loans for pre-and post-harvest activities, viz. spraying, harvesting, grading and transporting produce.  
• Loans to distressed farmers indebted to non-institutional lenders.  
• Loans under the Kisan Credit Card Scheme.  
• Loans to small and marginal farmers for the purchase of land for agricultural purposes.  
• Loans against pledge/hypothecation of agricultural produce (including warehouse receipts) for a period not exceeding 12 months’ subject to a limit of up to ₹75 lakhs against NWRs/eNWRs and up to ₹50 lakhs against warehouse receipts other than NWRs/eNWRs.  
• Loans to farmers for installation of stand-alone Solar Agriculture Pumps and solarisation of grid-connected Agriculture Pumps.  
• Loans to farmers for installation of solar power plants on barren/fallow land or in stilt fashion on agricultural land owned by farmers.  
• Farm credit to corporate farmers, Farmer Producer Organisations (FPOs)/(FPC), Companies of Individual Farmers, Partnership firms and Cooperatives of farmers engaged in Agriculture and Allied Activities. |
| **Loan for Agriculture Infrastructure** |
| • Construction of storage facilities (warehouses, market yards, godowns and silos), including cold storage units/ cold storage chains.  
• Soil conservation and watershed development.  
• Plant tissue culture and Agri-biotechnology, seed production, production of bio-pesticides, bio-fertilizer, and vermicomposting. |
| **Ancillary Activities** |
| • Loans up to Rs 5 crore to co-operative societies of farmers for purchase of the produce of members (Not applicable to UCBs)  
• Loans up to Rs 50 crore to Start-ups, as per the definition of the Ministry of Commerce and Industry, Govt. of India, that are engaged in agriculture and allied services.  
• Loans for Food and agro-processing up to an aggregate sanctioned limit of Rs 100 crore per borrower from the banking system.  
• Bank loans to Primary Agricultural Credit Societies (PACS), Farmers’ Service Societies (FSS) and Large-sized Adivasi Multi-Purpose Societies (LAMPS) for on-lending to agriculture.  
• Loans sanctioned by banks to MFIs for on-lending to the agriculture sector.  
• Outstanding deposits under RIDF and other eligible funds with NABARD on account of priority sector shortfall. |
2.2.1.6 Kisan Credit Card (KCC) Scheme

The KCC scheme was introduced in 1998-99 to ensure that the credit requirements of farmers were met through easy, short-term, affordable loans, and providing them with a credit limit to purchase equipment and other expenses. Salient features of the scheme are:

- Farmers are given credit for meeting their financial requirements of agricultural and other allied activities along with post-harvest expenses.
- Investment credit for agricultural requirements such as dairy animals, pump sets etc.
- Eligible farmers to be issued a savings account with attractive interest rate along with smart card and a debit card in addition to the KCC.
- Flexible repayment options and hassle-free disbursement procedure.
- Single credit facility / term loan for all agricultural and ancillary requirements.
- No collateral required for loans amounting up to 1.6 lakh INR

In 2019, the KCC Scheme was extended to meet the working capital requirements towards the following activities:

- Fisheries: Freshwater fish/prawn culture (including cold water), brackish water shrimp/fish crab/ culture, fish/shrimp/prawn/crab seed rearing, capture fisheries in freshwater, rakish water and marine & any other state-specific fisheries activities.
- Animal Husbandry: Milch animal rearing, poultry layer farming, poultry broiler farming, sheep rearing, goat rearing, pig rearing, rabbit rearing for wool and work animals. The scale of finance for Animal Husbandry & Fishery will be fixed by the District Level Technical Committee (DLTC) based on local costs worked out based on per acre/per unit.

Interest Subvention Scheme under KCC Scheme

The interest rate for quick loans made through Kisan Credit Cards (KCC) will receive interest subvention from the government to the tune of 2% (reduced to 1.5% recently). This means, for a loan on 9%, the effective rate can become 7% (or 7.5%). These will be brief loans for both crops and closely associated endeavours like dairy farming, fishing, beekeeping, and animal husbandry. Lenders, including computerised Primary Agriculture Cooperative Societies (PACS), Public Sector Banks (PSBs), and Private Sector Banks, will receive the subsidy (rural and semi-urban branches).

Prompt-Repayment Incentive (PRI)

If farmers pay off their short-term crop loans and working capital limits for agriculture, animal husbandry, and fisheries within a year of receiving or withdrawing such loans, they can earn a 3% interest subsidy. This takes their interest rates further down. The rate of 9% after interest subvention (OF 2%) and PRI (of 3%) can effectively reduce to 4%.

As of March 31, 2022, there were 7.13 crore active KCCs issued by all agencies, of which Rs. 3.11 crore, Rs. 1.33 crore, and Rs. 2.69 crores were active KCCs with cooperative banks, RRBs, and commercial banks, respectively. The amount outstanding against KCC at the end of March 31 2022, was Rs. 9,38,693 crores (provisional). Table 2.3 is showing the number of KCCs issued over the years till 2021.
The table shows an increasing trend in the number of KCCs issued, indicating the scheme’s growing popularity over the years.

There was a dip in the increase in numbers from 2018-2020, but by and large, the increasing trend can be seen for the amount of KCC loan issued since its inception, with the recent KCC saturation campaigns organised by the government as an example of how the government is trying to increase the uptake of KCC among farmers.

Table 2.3 Number of KCC issued since inception.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Year</th>
<th>Number of Operative KCC (in Lakh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1998-1999</td>
<td>7.84</td>
</tr>
<tr>
<td>2</td>
<td>1999-2000</td>
<td>51.34</td>
</tr>
<tr>
<td>3</td>
<td>2000-2001</td>
<td>86.52</td>
</tr>
<tr>
<td>4</td>
<td>2001-2002</td>
<td>93.41</td>
</tr>
<tr>
<td>5</td>
<td>2002-2003</td>
<td>82.43</td>
</tr>
<tr>
<td>6</td>
<td>2003-2004</td>
<td>92.46</td>
</tr>
<tr>
<td>7</td>
<td>2004-2005</td>
<td>96.80</td>
</tr>
<tr>
<td>8</td>
<td>2005-2006</td>
<td>80.12</td>
</tr>
<tr>
<td>9</td>
<td>2006-2007</td>
<td>74.70</td>
</tr>
<tr>
<td>10</td>
<td>2007-2008</td>
<td>72.99</td>
</tr>
<tr>
<td>11</td>
<td>2008-2009</td>
<td>846.67</td>
</tr>
<tr>
<td>12</td>
<td>2009-2010</td>
<td>936.73</td>
</tr>
<tr>
<td>13</td>
<td>2010-2011</td>
<td>101.69</td>
</tr>
<tr>
<td>14</td>
<td>2011-2012</td>
<td>117.60</td>
</tr>
<tr>
<td>15</td>
<td>2012-2013</td>
<td>129.82</td>
</tr>
<tr>
<td>16</td>
<td>2016-2017</td>
<td>714.74</td>
</tr>
<tr>
<td>17</td>
<td>2017-2018</td>
<td>692.16</td>
</tr>
<tr>
<td>18</td>
<td>2018-2019</td>
<td>663.00</td>
</tr>
<tr>
<td>19</td>
<td>2019-2020</td>
<td>652.80</td>
</tr>
<tr>
<td>20</td>
<td>2020-2021</td>
<td>737.70</td>
</tr>
<tr>
<td>21</td>
<td>2021-2022</td>
<td>713.49</td>
</tr>
</tbody>
</table>

Source: (RBI 2021) (NABARD 2021) (various years)

The data shows that the number of operative KCCs has steadily increased over the years, from Rs. 7.84 lakhs in 1998-1999 to 737.70 lakhs in 2020-2021. The highest growth was seen between 2007-2008 and 2008-2009, where the number of operative KCCs increased more than ten times, from Rs. 72.99 lakh to Rs. 846.67 lakh. Overall, the data suggest that the KCC scheme has successfully provided credit to farmers, as evidenced by the steady increase in operative KCCs and the amount of KCC outstanding over the years.
2.2.1.7 PM KISAN Scheme

The Prime Minister Kisan Samman Nidhi (PM-KISAN) Scheme was launched in February 24, 2019 to provide income support to all landholding farmer families in the nation. Farmers receive Rs. 6,000 annually as minimum income support and to maintain optimal crop health and suitable yields, consistent with the anticipated farm income and for home necessities. The Scheme is aimed at small and marginal farmers with less than 2 hectares of land and is expected to benefit 12 crore farmers in the country.

2.2.2 Crop Insurance

One of the major reasons for crop loss is drastic weather conditions and the best way to protect against this or any other crop loss is crop insurance. India has two major crop insurance schemes: Pradhan Mantri Fasal Bima Yojana (PMFBY) and Weather-Index Based Crop Insurance Scheme (WBCIS).

2.2.2.1 Pradhan Mantri Fasal Bima Yojana (PMFBY)

With an association of respective state governments by replacing the earlier Modified National Agricultural Insurance Scheme (MNAIS), the PMFBY was launched in 2016 in every state of India. The PMFBY scheme applies to all farmers, including small and tenant farmers, who grow pre-notified crops such as cereals, oilseeds, pulses, and horticultural crops. The primary purpose of PMFBY is to provide farmers with insurance cover and monetary support in the event of yield damage (Bhushan and Kumar 2017). PMFBY contains more farmer-friendly measures than National Agriculture Insurance Scheme (NAIS) and MNAIS and has also significantly decreased the farmers’ premium burden and increased risk coverage so that more farmers can obtain crop insurance.

This scheme was introduced to address certain shortcomings of the previous insurance schemes and come at par with the current times. PMFBY has supported the deployment of modern technologies to accurately measure losses and make compensation to farmers as quickly as possible. However, farmer wealth is essential in accessing PMFBY (Mukhopadhyay and Sengupta 2019). The PMFBY offered farmers risk protection in the event of yield losses in case of any pre-notified crops due to pests, natural disasters, or illnesses. The primary feature of the PMFBY scheme is the compulsory enrolment of loanee farmers in the specified area (FICCI 2018). Under the Public Private Partnership system, the implementing agencies, which are various insurance firms, charge the actuarial premium rate.

2.2.2.2 Weather-Index Based Crop Insurance Scheme (WBCIS)

The WBCIS was introduced in 2007 on a pilot basis by the Agriculture Insurance Company (AIC) in Karnataka. In 2011–2012, it was implemented on a large scale in about 19 states, and all types of crops were covered under the scheme. Now it has been restructured as RWBCIS in 2016 with premium rates at par with PMFBY. The WBCIS is a substantial solution for weather hazards (Biswa 2009) and acts as catastrophe insurance against unfavorable weather events in agriculture (Bjerge and Trifkovic 2018). WBCIS emerged as an alternate option for farmers since it addresses the various limitations of
traditional agricultural insurance (Nair 2010) by insuring the weather risk in agriculture Rao (2010).

WBCIS is based on a predetermined statistical index produced before the start of the insurance period based on meteorological data, which assesses departures from the typical level of weather parameters. These weather factors are used as a proxy for determining claim payouts to farmers. This scheme made the claim settlement process faster and reduced operating costs associated with analyzing claims. WBCIS provides an administrative benefit over traditional farm insurance and has gained favour in developing areas where conventional agriculture insurance poorly performs Rao (2011).

Table 2.4 Total Expenditure of Pradhan Mantri Fasal Bima Yojana (PMFBY) and Restructured Weather Based Crop Insurance Scheme (RWBCIS)

<table>
<thead>
<tr>
<th>Year</th>
<th>Expenditure (In Rs. Crore)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016-2017</td>
<td>11,055</td>
</tr>
<tr>
<td>2017-2018</td>
<td>9,420</td>
</tr>
<tr>
<td>2018-2019</td>
<td>11,945</td>
</tr>
<tr>
<td>2019-2020</td>
<td>12,638</td>
</tr>
<tr>
<td>2020-2021</td>
<td>9,800</td>
</tr>
<tr>
<td>2021-2022</td>
<td>9,719</td>
</tr>
</tbody>
</table>

Source: Ministry of Agriculture and Farmers Welfare (2022)

Table 2.4 provides information on the expenditure of PMFBY and RWBCIS incurred during the years 2016-2017 to 2021-2022. The data indicates that the expenditure has varied over the years, with the highest expenditure incurred in the year 2019-2020, amounting to Rs. 12,638 crores and a decrease in expenditure in the following year, 2020-2021, to Rs. 9,800 crores, followed by a slightly more decrease in 2021-2022 to Rs. 9,719 crores.

2.2.2.3 Current Status of PMFBY and RWBCIS

Table 2.5 provides a detailed summary of PMFBY and RWBCIS from the year 2016-17 to 2021-22. The total number of farmer applications insured under PMFBY during this period is 3,579 lakhs, covering 2.873 lakh hectares of land, with a sum insured of Rs. 11,90,381 crores. The gross premium collected by the insurance companies during this period was Rs. 1,63,688 crores, and farmers paid Rs. 24,555 crores as their share of the premium.

As shown in figure 2.6, the trends in farmers’ applications and area insured have not fluctuated drastically in the last few years. However, the sum insured has decreased consistently in the last four years. This needs further examination. Although good news is that more than 90% of claims were paid off, although even this ratio is decreasing in last few years. The government and insurance companies must address these issues to ensure more farmers benefit from the scheme.
Table 2. PMFBY & RWBCIS - All India Business Statistics since implementation as on 11.01.2021

<table>
<thead>
<tr>
<th>Season /Year</th>
<th>Farmer Applications Insured (Lakh)</th>
<th>Area Insured (Lakh ha)</th>
<th>Sum Insured (Rs. Crore)</th>
<th>Farmers Share in Premium (Rs. Crore)</th>
<th>Gross Premium (Rs. Crore)</th>
<th>Reported Claims (Rs. Crore)</th>
<th>Paid Claims (Rs. Crore)</th>
<th>Farmer Applications Benefitted (Lakh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016-17</td>
<td>584</td>
<td>567</td>
<td>2,03,121</td>
<td>4,042</td>
<td>21,573</td>
<td>16,775</td>
<td>16,760</td>
<td>156</td>
</tr>
<tr>
<td>2017-18</td>
<td>533</td>
<td>508</td>
<td>2,02,265</td>
<td>4,189</td>
<td>24,635</td>
<td>22,117</td>
<td>22,113</td>
<td>170</td>
</tr>
<tr>
<td>2018-19</td>
<td>577</td>
<td>523</td>
<td>2,30,060</td>
<td>4,853</td>
<td>29,348</td>
<td>28,643</td>
<td>27,633</td>
<td>218</td>
</tr>
<tr>
<td>2019-20</td>
<td>610</td>
<td>496</td>
<td>2,17,709</td>
<td>4,403</td>
<td>31,719</td>
<td>25,273</td>
<td>23,485</td>
<td>210</td>
</tr>
<tr>
<td>2020-21</td>
<td>616</td>
<td>450</td>
<td>1,97,560</td>
<td>4,021</td>
<td>31,561</td>
<td>11,432</td>
<td>10,875</td>
<td>113</td>
</tr>
<tr>
<td>2021-22</td>
<td>659</td>
<td>329</td>
<td>1,39,666</td>
<td>3,047</td>
<td>24,852</td>
<td>3,163</td>
<td>2,863</td>
<td>59</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,579</strong></td>
<td><strong>2,873</strong></td>
<td><strong>11,90,381</strong></td>
<td><strong>24,555</strong></td>
<td><strong>1,63,688</strong></td>
<td><strong>1,07,403</strong></td>
<td><strong>1,03,729</strong></td>
<td><strong>928</strong></td>
</tr>
</tbody>
</table>

Source: Ministry of Agriculture and Farmers Welfare (2022)

Figure 2.6 Crop Insurance statistics of schemes since implementation till 2021

Figures 2.7 and 2.8 gives the total sum of farmers that have been insured in each state under PMFBY and WBCIS, respectively. The central government has left it up to the states to decide what particular scheme they would like to offer. A state can offer either PMFBY or WBCIS or both or none. An analysis of the data reveals that PMFBY is the more popular scheme, with 21 states offering crop insurance, compared to only 13 states offering coverage under RWBCIS. Additionally, ten states provide coverage under both schemes, while the remaining offer coverage under only one.

Among the states offering crop insurance under PMFBY, Rajasthan has the highest number of farmers, with 51,89,872 farmers opting for insurance coverage. In contrast, Andhra Pradesh has the highest number of farmers covered under RWBCIS, with 7,34,653 farmers opting for coverage. Notably, Punjab has the lowest number of farmers covered under both schemes.
Figure 2. 7 Sum of farmers covered under PMFBY state-wise.

Source: Ministry of Agriculture and Farmers Welfare

Figure 2. 8 Sum of farmers covered under RWBCIS state-wise

Source: Ministry of Agriculture and Farmers Welfare
2.2.2.4 Challenges

Based on the survey conducted by NABARD in 2016 (NABARD 2016-17), when farmers were asked their reasons for not opting for crop insurance, about 67% of the farmers cited that they did not have the funds to opt for crop insurance, and about 3% of the farmers cited that they want to opt for crop insurance, but they do not know where to get the insurance. 31% of the farmers did need insurance, whereas 32% did not have a regular income, and so paying regular premiums was impossible. Moreover, about 2% of the farmers said they do not trust the insurance system due to a bad experience with someone else in the village. And about 2% of the farmers did not apply for crop insurance for other reasons. These impressions need further understanding, and in-depth analysis. While in 2016, based on this survey, about 23% of the farmers were not opting for any form of crop insurance, according to the NSSO 77th round of survey in 2019, an improvement was observed in 2019 where this figure (percentage of farmers not opting for any crop insurance) had reduced to 10%. In 2019, about 39% of the farmers not opting for crop insurance said they were not aware about crop insurance, about 23% were not interested and only about 3% of the farmers found the process of getting crop insurance very complicated. While this has been encouraging, the overall numbers in the figures and tables in this section warrant deeper examination.

2.2.3 Storage

Storage, or lack thereof, is a significant issue faced by farmers nationwide. Post-harvest, a farmer might not want to sell their produce, but for lack of storage, he has to sell it, often at a lower price. This flooding of the market post-harvest also drives the prices down, which harms the farmers again. One can add the cost of perishing of agricultural produce due to the lack of storage, to see a much greater impact of storage in overall agricultural sector’s performance in the country. Over the years, the government has launched many schemes to create more storage capacity for farmers.

2.2.3.1 Gramin Bhandaran Yojana (GBY)

The Gramin Bhandaran Yojana (GBY) was launched in 2001 to build storage facilities in rural areas (Ministry of Agriculture 2014). The primary goal of the program is to build specialised storage facilities with supporting infrastructure in rural areas to accommodate farmers’ needs for storing agricultural output (Ministry of Agriculture 2012). The plan included building storage facilities and encouraging agricultural produce grading, standardisation, and quality assurance of to increase marketability. The Directorate of Marketing and Inspection (DMI), running the program in 2013, saw the creation of the Integrated Scheme for Agricultural Marketing (ISAM). Agricultural Marketing Infrastructure (AMI), a sub-scheme of ISAM, was developed. Gramin Bhandaran Yojana (GBY) and the Development/Strengthening of Agricultural Marketing Infrastructure, Gradig and Standardization (AMIGS) were combined to establish AMI (Ministry of Agriculture 2014).

2.2.3.2 Warehouse Infrastructure Fund (WIF)

In 2014, the Reserve Bank of India (RBI) published instructions for establishing the Warehouse Infrastructure Fund (WIF) within NABARD. To assist in developing infrastructure for agricultural
commodity storage, the central government gave WIF Rs. 5000 crores. The fund was to provide loans to public and private sectors to build cold chain infrastructure, including silos, storage, and warehouses. The National Food Security Act of 2013 and the increasing need for storage space for agricultural products necessitated Fund’s creation. The lack of storage facilities in the Eastern and North-Eastern regions of the country was a factor in the scheme’s prioritization of projects there. In order to build storage infrastructure, almost any type of organization—from state governments to private businesses to Farmers’ Producers’ Organizations (FPOs)—could apply for a loan through this fund. WIF operates under the public-private partnership (PPP) model, where public funding is provided for the project, and private partners are responsible for its construction and maintenance. This model simultaneously accomplishes two goals; increasing the nation’s storage capacity and giving opportunities to private businesses in this industry (NABARD 2015).

As of 31 March 2021, Rs. 10,000 crores have been allocated to the warehouse infrastructure fund (WIF). About Rs. 9,728 crores worth of projects have been sanctioned, of which about Rs. 7,621 crores have been disbursed, creating a capacity of about 13 million MT. Since the start of WIF in 2014, the fund has sanctioned 7,571 projects and completed 5,528 projects creating a total capacity of about 6 million MT.

The figure 2.9 below represents the warehouses created under WIF in different regions indicating the performance of the region in terms of utilization of the funds and in turn the performance of the regions as of March 2022. The figure gives us a better idea about the majorly benefiting regions from WIF and the regions that need more support from WIF.

In 2020, WIF sanctioned Rs. 1,059 crores worth of projects and disbursed Rs. 845 crores worth of projects, and over the years, the total projects sanctioned has only been going down, whereas in 2022 under WIF 0 projects were sanctioned, and only Rs. 594 crores worth of projects were disbursed.

Figure 2.9: Region-wise warehouses created under WIF in different regions

![Region-wise performance of WIF](image)

Source: Annual Report, NABARD (2022)
The graph indicates that the maximum number of projects sanctioned under the WIF were in the South region, with 3,824 projects, while the North region, with only 198, had the lowest number of sanctioned projects. The East region had the highest number of completed projects, with 675, while the Central region had the lowest number, with only 7 completed projects. The WIF has created a total capacity of 5.69 million tonnes, with the South region contributing the highest capacity creation of 3.24 million tonnes, while the Central region contributed the least capacity creation of only 77,000 tonnes. The total amount sanctioned under the WIF was Rs. 9,578 crores, while the South region received the highest amount of sanction at Rs. 5,294 crores and the Central region received the lowest sanction amount of Rs. 348 crores.

The region-wise analysis suggests that the WIF has primarily focused on the South and East regions of the country, which have the highest agricultural production and demand for storage infrastructure.

2.2.3.3 Negotiable Warehouse Receipt (NWR) or Electronic NWR

The Warehousing Development and Regulatory Authority (WDRA) was established in 2010 following the enactment of the Warehousing (Development & Regulation) Act 2007. The primary goal of the WDRA is to introduce the Negotiable Warehouse Receipt (NWR)/Electronic Negotiable Warehouse Receipt (e-NWR) system in India in order to encourage farmers (as well as businesses) not to sell their produce right after harvest, when prices typically fall to their lowest levels of the year. They can keep their produce in WDRA-approved warehouses that provide NWRs or e-NWRs. Farmers can use e-NWR to apply for institutional financing from banks using their NWR or e-NWR as collateral. The farmer saves money by not having to grade his produce separately for the loan, and the bank has an easier time because a e-NWR is reliable due to this practice of being able to gain credit on it. The WDRA controls the negotiability of warehouse receipts in order to increase bank and depositor confidence in the rapidly changing financial system. The WDRA also promotes scientific goods warehousing, registration of warehouses, improved fiduciary trust between depositors and banks, increased liquidity in rural areas, and efficient supply chains (Department of Food and Public Distribution 2011).

Effective August 2019, all registered warehouses have to issue only e-NWRs. Two repositories were established as part of the e-NWR Scheme: CDSL Commodity Repository Limited (CCRL) and National E-Repository Limited (NERL), providing an online platform for the issue of e-NWRs. By depositing commodities in any warehouse registered with WDRA, commodity clients could get electronic receipts (e-NWRs) in a demat account. CCRL’s mission is to provide convenient, dependable, and secure repository services at reasonable prices to all market players, while NERL aims to support producers, traders, processors, and every other member of the commodity markets’ value chain. The goal is to simplify the business of using warehouse receipts for all our stakeholders and make electronic warehouse receipts valuable and safe. The creation of the repository also made independent and accurate record-keeping possible.

Table 2.6 provides data on the number of registered warehouses negotiable warehousing receipts (NWRs) and e-NWRs issued, the total quantity of stocks against NWR/e-NWR, and the total loan
against NWRs/e-NWRs in crore rupees for the period of 2011-12 to 2021-22. The table also shows that the number of registered warehouses increased consistently, from 240 in 2011-12 to 1,005 in 2019-20, before declining to 337 in 2020-21 and further down to 123 in 2021-22. In contrast, the number of NWRs and e-NWRs issued has fluctuated over the years, with a sharp rise in 2014-15 and a subsequent decline in the following years. However, in 2017-18, there was a significant jump in the number of e-NWRs issued, which continued to increase in the subsequent years, reaching a peak of 1,38,637 in 2019-20.

The total quantity of stocks against NWR/e-NWR has also fluctuated over the years, with a significant rise in 2014-15 and a decline in the following years before reaching a peak of 9.49 lakh tons in 2019-20. However, the quantity of stocks against e-NWRs has consistently been higher than NWRs since 2017-18.

The total loan against NWRs/e-NWRs has consistently increased over the years, with a sharp rise in 2018-19 and a subsequent decline in the following years. The highest loan amount of Rs. 4,342.21 crores were recorded in 2019-20, with e-NWRs accounting for most of the loan amount.

Implementing the mandatory e-NWR system in 2017-18 resulted in a shift from physical NWRs to e-NWRs. However, the lack of digital infrastructure in warehouses and lack of awareness among farmers about the e-NWR process contributed to fluctuations in the number of NWRs and e-NWRs issued over the years. A sudden increase in the number of NWRs issued in 2019-20 was observed due to the delay in implementing the mandatory e-NWR system. But in 2020-21, the mandatory eNWR system resulted in a significant drop in the number of NWRs issued, because if the state government is not equipped with adequate digital infrastructure, they weren’t able to issue this electronic NWR. To promote the adoption of e-NWRs, increased investment in digital infrastructure and awareness-building initiatives is required in the agricultural sector.

According to Warehousing Development and Regulatory Authority (WDRA), for a six-month period, the application fee for warehouse storing for agricultural goods ranges from Rs. 5,000 for a warehouse of 500 ton capacity to Rs. 30,000 for one with 25,000 ton capacity. At the same time, the application fee for warehouse storing for agriculture and non-agricultural goods ranges from Rs. 50,000 for a warehouse of 10,000 ton capacity to Rs. 1,00,000 for one with 25,000 ton capacity.

Table 2. 6 Year-wise details of registered warehouses with WDRA, NWRs issued, and loan financed against NWRs/e-NWR as (figures for 2021-22 are as on 31.05.2021)

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Year</th>
<th>No. of registered warehouses</th>
<th>No. of NWRs / e-NWR issued</th>
<th>Total Quantity of Stocks against NWR / e-NWR (In Lakh Ton)</th>
<th>Total loan against NWRs / e-NWR (Rs. in crores)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2011-12</td>
<td>240</td>
<td>8,056</td>
<td>1.35</td>
<td>591</td>
</tr>
<tr>
<td>2</td>
<td>2012-13</td>
<td>92</td>
<td>8,242</td>
<td>1.39</td>
<td>105.65</td>
</tr>
<tr>
<td>3</td>
<td>2013-14</td>
<td>68</td>
<td>6,121</td>
<td>2.57</td>
<td>108.02</td>
</tr>
<tr>
<td>4</td>
<td>2014-15</td>
<td>234</td>
<td>16,993</td>
<td>5.12</td>
<td>388.42</td>
</tr>
<tr>
<td></td>
<td>Year</td>
<td>Value</td>
<td>Quantity</td>
<td>Rate</td>
<td>Value</td>
</tr>
<tr>
<td>---</td>
<td>--------</td>
<td>-------</td>
<td>----------</td>
<td>------</td>
<td>-------</td>
</tr>
<tr>
<td>5</td>
<td>2015-16</td>
<td>588</td>
<td>15,178</td>
<td>5.69</td>
<td>203.47</td>
</tr>
<tr>
<td>6</td>
<td>2016-17</td>
<td>214</td>
<td>19,350</td>
<td>3.58</td>
<td>148.4</td>
</tr>
<tr>
<td>7</td>
<td>2017-18</td>
<td>261</td>
<td>12,313</td>
<td>3.62</td>
<td>118.51</td>
</tr>
<tr>
<td></td>
<td>(Online: 106)</td>
<td></td>
<td>(e-NWR: 114)</td>
<td></td>
<td>(against e-NWR: Rs.0.20 Cr)</td>
</tr>
<tr>
<td>8</td>
<td>2018-19</td>
<td>607</td>
<td>89,114</td>
<td>7.23</td>
<td>135.59</td>
</tr>
<tr>
<td></td>
<td>(Online:601)</td>
<td></td>
<td>(e-NWR: 77332)</td>
<td></td>
<td>(against e-NWR: 28.2774)</td>
</tr>
<tr>
<td>9</td>
<td>2019-20</td>
<td>1005</td>
<td>1,38,637</td>
<td>9.49</td>
<td>434.21</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(e-NWR: 1,34,939)</td>
<td></td>
<td>(e-NWR-379.72)</td>
</tr>
<tr>
<td>10</td>
<td>2020-21</td>
<td>337</td>
<td>e-NWR: 88,480</td>
<td>e-NWR: 7.72</td>
<td>e-NWR: 731.79</td>
</tr>
<tr>
<td>11</td>
<td>2021-22</td>
<td>123</td>
<td>e-NWR: 17,975</td>
<td>e-NWR: 1.69</td>
<td>e-NWR: 176.81</td>
</tr>
<tr>
<td>Total</td>
<td>3769</td>
<td>4,20,459</td>
<td>47.69</td>
<td>3145.67</td>
<td></td>
</tr>
</tbody>
</table>

Source: (Department of Food and Public Distribution 2021)

### 2.2.3.4 Central Sector Scheme “Storage & Godowns”

A Central Sector Scheme for Storage and Godowns was introduced to augment the storage capacity in the Northeastern states of India. A few other states, including Himachal Pradesh, Jharkhand, and Kerala, have this program in place as well. Per this scheme, money is given directly to Food Corporation of India in the form of equity for the purchase of land and the building of storage godowns as well as other infrastructure such as railway sidings, electrification, weighbridge installation, etc.

Given the storage gaps and challenging geographical and climatic conditions in these regions, money is also granted as grants-in-aid to the governments of the North-Eastern states, and Jammu & Kashmir, for constructing intermediate storage godowns. The six-year extension of this programme runs from 2017 through 2023 (Department of Food and Public Distribution 2017).

### 2.2.3.5 Private Entrepreneurs Guarantee (PEG) Scheme for Construction of Godowns

The Private Entrepreneurs Guarantee (PEG) Scheme was introduced in 2008 to support the Public Private Partnership (PPP) building of storage godowns. This plan’s primary goal is to overcome storage limitations and guarantee the safe stocking of food grains nationwide while allowing for participation from private businesses, the Central Warehousing Corporation (CWC), and State Warehousing Corporations (SWCs).

The entire procurement/consumption pattern and the amount of storage space already available are used to determine the additional storage capacities needed under the programme. The development of the storage facility was not funded under PEG; instead, private parties, CWC, and state agencies organized their own cash and the land for the project.

Regardless of the amount of foodgrains kept, FCI guarantees rent for 10 years in the case of private
investors and for nine years CWCs, SWCs, and state agencies after a godown is built and taken over (Department of Food and Public Distribution 2008).

2.2.3.6. Storage Statistics

Mismatch between production and storage capacity

The agricultural sector has played a vital role in the Indian economy and has undergone significant growth since the 1950s. As indicated in the table 2.7, over this period, food grain production in the country increased six-fold, yet to be matched with a corresponding growth in warehousing capacity. For instance, in 2011-12, when the country produced approximately 259 million MT of food grain, the storage capacity was only about 108 million MT, even in 2020-2021, the storage capacity was still inadequate, with only 166 million MT of capacity available, which is 50% of the food grain produced (see Fig. 2.10).

<table>
<thead>
<tr>
<th>Year</th>
<th>Foodgrain production (in million metric tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1951-52</td>
<td>51</td>
</tr>
<tr>
<td>1961-62</td>
<td>83</td>
</tr>
<tr>
<td>1971-72</td>
<td>105</td>
</tr>
<tr>
<td>1981-82</td>
<td>133</td>
</tr>
<tr>
<td>1991-92</td>
<td>168</td>
</tr>
<tr>
<td>2001-02</td>
<td>213</td>
</tr>
<tr>
<td>2011-12</td>
<td>259</td>
</tr>
<tr>
<td>2015-16</td>
<td>251</td>
</tr>
<tr>
<td>2016-17</td>
<td>275</td>
</tr>
<tr>
<td>2017-18</td>
<td>285</td>
</tr>
<tr>
<td>2018-19</td>
<td>285</td>
</tr>
<tr>
<td>2019-20</td>
<td>297</td>
</tr>
<tr>
<td>2020-21</td>
<td>305</td>
</tr>
</tbody>
</table>

Source: (Warehousing Development and Regulatory Authority 2021)

This mismatch between production and storage capacity poses a significant challenge for the Indian agriculture sector. Surely, not everything produced need to be stored, but the difference in India’s case is telling. As mentioned, farmers are often forced to sell their produce immediately after harvest at a lower price due to the lack of proper storage facilities, leading to reduced returns on their investment. Additionally, due to the inadequate storage capacity, many crops are left to spoil and go to waste, further exacerbating the problem.

Overall, the increase in food grain production is yet to be matched by a corresponding growth in warehousing capacity in India, which poses a significant challenge to the agricultural sector. Efforts to improve storage infrastructure and encourage private sector participation in warehousing development are necessary to address this issue and support the growth and sustainability of the agriculture sector in India.
Figure 2.10 Institution wise warehousing capacity

Source: Annual Reports, WDRA (from 2010-2011 to 2020-2021)

Figure 2.10 shows the quantity of foodgrains stored in various organizations/sectors in India from 2010-11 to 2020-21 and also reveals that the Food Corporation of India (FCI) had the highest storage of foodgrains, followed by the State Warehousing Corporation (SWC), the private sector, and the Central Warehousing Corporation (CWC).

The FCI’s storage capacity increased gradually, except for a slight dip in 2011-12 and 2015-16. The CWC’s storage capacity remained relatively stable until 2015-16, after which it increased significantly in 2020-21. In contrast, the SWCs’ storage capacity fluctuated significantly over the years, with a peak in 2015-16 and a dip in 2018-19.

The private sector’s storage capacity remained constant until 2015-16, after which it increased significantly, surpassing the CWC’s storage capacity. Overall, the total quantity of food grains stored across all organizations/sectors increased gradually, with a slight dip in 2012-13 and a significant increase in 2020-21. Each of these factors are worth going deeper into.

Wastage of Agri-produce

In 2020-2021 about 78 million MT of wheat and paddy was wasted, which could have been avoided if ample food storage had been available. Last year, the states to lose the highest percentage of their agricultural produce were West Bengal losing about 11 million MT of wheat and paddy, the majority being wheat, followed by Gujarat at approximately 10 million MT and Madhya Pradesh at 9 million MT. Many schemes are available through which farmers can store their produce in warehouses; however, the schemes are unable to produce the desired result in the quickest way possible.
The data shows a need for more efforts to reduce food grain wastage, which is a valuable resource and essential for food security. The states with higher wastage need to take necessary measures to minimize losses, increase their storage capacity, and improve the awareness level regarding storage among the farmers, while the states with no reported wastage can share their best practices to help other states reduce their wastage.

**Gaps in the Cold Storage Infrastructure**

Table 2.8 presents India’s gap in four types of storage infrastructure, namely, Pack-house, Cold Storage (Bulk), Reefer Vehicles, and Ripening Chamber. It indicates that there is a significant gap between the requirement and availability of infrastructure in all four categories. The All-India requirement for pack-houses is 70,080, but only 249 are available, meaning only 1% of the requirement has been met. Similarly, the requirement for cold storage is 351 crore MT, but only 318 crore MT of storage is created, indicating a shortfall of 32 lakh MT representing a gap of about 10%. The availability of reefer vehicles is also significantly low, with only 9,000 vehicles available against the requirement of 61,826,
leaving a gap of about 85%; moreover, the gap for ripening chambers is comparatively lower, with a requirement of 9,131 and availability of 812, leaving a gap of about 90%.

<table>
<thead>
<tr>
<th>Type of Infrastructure</th>
<th>All India Requirement (A)</th>
<th>All India Created (B)</th>
<th>All India Gap (A-B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pack-house</td>
<td>70,080 nos.</td>
<td>249 nos.</td>
<td>- 69,831 nos.</td>
</tr>
<tr>
<td>Cold Storage (Bulk)</td>
<td>3,51,00,662 MT</td>
<td>318,23,700 MT</td>
<td>- 32,76,962 MT</td>
</tr>
<tr>
<td>Reefer Vehicles</td>
<td>61,826 nos.</td>
<td>9,000 nos.</td>
<td>- 52,826 nos.</td>
</tr>
<tr>
<td>Ripening Chamber</td>
<td>9,131 nos.</td>
<td>812 nos.</td>
<td>- 8,319 nos.</td>
</tr>
</tbody>
</table>

Source: (NCCD 2015)

The findings suggest a significant lack of infrastructure for post-harvest management, which can lead to increased wastage of agricultural produce, lower income for farmers, and reduced food availability for consumers. The inadequate availability of pack-houses, cold storage, reefer vehicles, and ripening chambers is a significant challenge that needs to be addressed to support the growth of the agriculture sector in India by increasing investments in the creation of post-harvest management infrastructure, particularly in rural areas, ensuring that the produce reaches the market in good condition and benefits all stakeholders.

2.2.4 Marketing

Marketing is one of the most important aspects of agriculture sector in India, that needs continuous support from the government. Post-harvest, farmers in India have various options for selling their produce, both government and non-government. However, due to existing regulations and restrictions, such as low economies of scale and insufficient storage and transportation facilities, most produce is sold in either local or government markets. According to the National Sample Survey Office (NSSO) report in 2019, out of the 93 million agricultural households in India, approximately 63% reported the sale of crops, of which 76% sold to local markets and only 7.2% sold to Agricultural Produce Marketing Committee (APMC) markets, indicating a substantial proportion of the produce being sold outside of government markets. Furthermore, the report revealed that only 5.4% and 0.37% of agricultural households sold their produce to private processors and contract farming companies, respectively, highlighting the need for improving the marketing system to ensure better price realisation for agricultural commodities, which is a primary objective of building an efficient marketing system (NSSO 2019). Here, contract farming is seen as an effective means of generating supplies for processing industries and exporters, with a substantial potential of adding value to agriculture (DEAR, NABARD 2005).

Efficient marketing systems are critical to ensuring better price realisation for agricultural commodities, and low prices are a common problem farmers face. However, the most recent national-scale survey conducted by the NSSO (2019) indicates that 60% of agricultural households were satisfied with their sale outcomes, while 36% were dissatisfied due to receiving lower than market prices.
2.2.4.1 e-NAM

A pan-Indian electronic trading system called electronic-National Agriculture Market (e-NAM) aims to connect the physical Agricultural Produce Marketing Committees (APMCs) over a digital platform to develop a unified national market for agricultural goods. Through e-NAM, a single window service for all APMC-related information and services is provided, such as commodity arrivals, quality & prices, buy & sell offers, provision to respond to trade offers and electronic payment settlement directly into farmers’ accounts. More importantly, through observing various prices in range of nearby mandis, the farmers can choose to decide which mandi to go and sell their produce in. this also creates competition between mandis to attract farmers.

The scheme is aimed at addressing the inefficiencies of the existing system by reducing transaction costs, bridging information asymmetry and helps in expanding the market access to farmers. It aims to improve farmers’ access to various markets and buyers, that will provide transparent competitive bids and assure accurate price discovery (Ministry of Agriculture and Farmers’ Welfare 2016).

2.2.4.2 Agricultural Marketing Infrastructure (AMI)

The AMI scheme was updated to develop agricultural value chain by building post-harvest infrastructure to promote value addition and processing by farmers to increase their income by selling more marketable produce. More recently, the Ministry of Agriculture & Farmers Welfare is implementing the Integrated Scheme for Agricultural Marketing (ISAM), of which Agricultural Marketing Infrastructure (AMI) is a back-ended capital subsidy scheme. Multiple schemes are functioning under the umbrella of ISAM for different aspects of marketing, such as research, information, grading and training facilities, and agri-business development. AMI under ISAM is the major scheme covering many aspects such as storage, marketing, value addition in agriculture sector.

The ISAM has the following five sub schemes:

- Agricultural Marketing Infrastructure (AMI) [the existing schemes of Grameen Bhandaran Yojana (GBY) and Development/ Strengthening of Agricultural Marketing Infrastructure, Grading and Standardization (AMIGS) will be merged as AMI]
- Marketing Research and Information Network (MRIN)
- Strengthening of Agmark Grading Facilities (SAGF),
- Agri-Business Development (ABD) through Venture Capital Assistance (VCA) and Project Development Facility (PDF) and
- Choudhary Charan Singh National Institute of Agriculture Marketing (NIAM).

Under the scheme, a subsidy is provided on the project’s capital cost to develop agricultural marketing infrastructure, including storage infrastructure (Ministry of Agriculture 2014).

- Effective from 2018, the sub-scheme has two components: (i) Storage Infrastructure and (ii) Marketing Infrastructure other than storage. The rationale of the scheme is to promote the construction of agricultural marketing and storage facilities. Due to the demand-driven nature of the programme, the emphasis is on the holistic development of the agricultural value chain, paying close attention to each link in the post-harvest value chain.
DAC&FW has circulated guidelines on ‘Operation and Management of GrAMs’ to all states to facilitate and promote better management. Existing Gramin Haats were to be upgraded to work as centres of aggregation and for direct purchase of agricultural commodities from the farmers (Ministry of Agriculture and Farmers’ Welfare 2018 b).

The table 2.9 provides information on the physical and financial progress of the Agricultural Marketing Infrastructure (AMI), sub-scheme of ISAM, excluding the storage infrastructure component, in various Indian states and union territories. The data covers the total capacity in metric tonnes, the subsidy sanctioned and released, the total number of projects, the total eligible subsidy, and the total subsidy released.

One trend observed from the table is considerable variation in the physical and financial progress of the AMI sub-scheme across different states. For instance, some states, such as Gujarat and Madhya Pradesh, have a significantly higher capacity in metric tonnes, while states, like Arunachal Pradesh have negligible capacity. Similarly, some states, such as Andhra Pradesh and Telangana, have received substantially higher subsidies compared to others like Bihar and Jharkhand. Another finding from the table is that the implementation of the AMI sub-scheme has been slow and uneven, with several states having a low number of projects sanctioned or released. For instance, states like Bihar and Jharkhand have yet to report any projects, indicating a lack of progress in implementing the scheme, while states, such as Uttarakhand and West Bengal, have not reported any subsidy released, indicating slow progress in implementing the scheme in those states.

Table 2.9 Physical and Financial Progress of Agricultural Marketing Infrastructure (AMI) sub-scheme of ISAM (from 2004 to 2018)

<table>
<thead>
<tr>
<th>State</th>
<th>Capacity in MT</th>
<th>Subsidy Sanctioned</th>
<th>Total Subsidy Released</th>
<th>Total No. of Projects</th>
<th>Total Eligible Subsidy</th>
<th>Total Subsidy Released</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Storage infrastructure)</td>
<td>(Other than Storage Infrastructure component)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Andhra Pradesh</td>
<td>53,20,998</td>
<td>28,372.74</td>
<td>24,492</td>
<td>369</td>
<td>8,380</td>
<td>6,827</td>
</tr>
<tr>
<td>Arunachal Pradesh</td>
<td>945</td>
<td>6</td>
<td>6</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Assam</td>
<td>10,72,857</td>
<td>13,348</td>
<td>4,920</td>
<td>13</td>
<td>585</td>
<td>555</td>
</tr>
<tr>
<td>Bihar</td>
<td>4,87,187</td>
<td>2,708</td>
<td>2,006</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Chhattisgarh</td>
<td>19,43,545</td>
<td>9,935</td>
<td>630</td>
<td>336</td>
<td>72,06</td>
<td>6,728</td>
</tr>
<tr>
<td>Goa</td>
<td>299</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Gujarat</td>
<td>44,72,390</td>
<td>28,088</td>
<td>25,844</td>
<td>8,705</td>
<td>25,406</td>
<td>18,726</td>
</tr>
<tr>
<td>Haryana</td>
<td>65,03,872</td>
<td>42,544</td>
<td>36,220</td>
<td>6</td>
<td>120</td>
<td>60</td>
</tr>
<tr>
<td>Himachal Pradesh</td>
<td>27,486</td>
<td>280</td>
<td>158</td>
<td>63</td>
<td>1,643</td>
<td>1,643</td>
</tr>
<tr>
<td>Jammu &amp; Kashmir</td>
<td>83,027</td>
<td>685</td>
<td>685</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Jharkhand</td>
<td>14,2,316</td>
<td>767</td>
<td>612</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Karnataka</td>
<td>38,99,528</td>
<td>22799</td>
<td>18,601</td>
<td>834</td>
<td>11,228</td>
<td>10,176</td>
</tr>
<tr>
<td>Kerala</td>
<td>90,511</td>
<td>502</td>
<td>476</td>
<td>376</td>
<td>6,697</td>
<td>63,03</td>
</tr>
<tr>
<td>Madhya Pradesh</td>
<td>1,05,84,301</td>
<td>57,808</td>
<td>54,788</td>
<td>1,536</td>
<td>52,943</td>
<td>43,554</td>
</tr>
<tr>
<td>State</td>
<td>Total Budget Allocation</td>
<td>Expenditure</td>
<td>Expenditure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------------</td>
<td>-------------</td>
<td>-------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maharashtra</td>
<td>66,70,711</td>
<td>30,312</td>
<td>24,750</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meghalaya</td>
<td>21,012</td>
<td>188</td>
<td>187</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mizoram</td>
<td>302</td>
<td>5</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nagaland</td>
<td>814</td>
<td>7</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Odisha</td>
<td>10,09,180</td>
<td>4,814</td>
<td>3,781</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Punjab</td>
<td>67,41,842</td>
<td>23,155</td>
<td>23,123</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rajasthan</td>
<td>26,76,499</td>
<td>12,144</td>
<td>8,034</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tamil Nadu</td>
<td>13,13,524</td>
<td>5,690</td>
<td>4,970</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telangana</td>
<td>44,85,910</td>
<td>31,463</td>
<td>22,306</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tripura</td>
<td>28,764</td>
<td>317</td>
<td>297</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uttarakhand</td>
<td>7,62,389</td>
<td>3.397</td>
<td>3,355</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>West Bengal</td>
<td>15,81,523</td>
<td>5,272</td>
<td>4,900</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UTs</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6,52,44,301</td>
<td>3,42,165</td>
<td>2,87,657</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: (Directorate of Marketing and Inspection 2018)

This highlights the need for continued efforts to enhance the implementation of the AMI sub-scheme in all states and union territories to achieve the scheme’s goals, such as improving agricultural marketing infrastructure, enhancing farmers’ income, and reducing wastage of agricultural produce. Table 2.10 provides the progress, budget allocation and expenditure under the erstwhile AMIGS scheme subsumed under ISAM scheme in 2014.

### Table 2. 10 Year wise progress, budget allocation and expenditure under the AMIGS

<table>
<thead>
<tr>
<th>Plan</th>
<th>Year</th>
<th>Number of Projects Sanctioned</th>
<th>Total Budget Allocation (In Rs. crore)</th>
<th>Expenditure (In Rs. crore)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>X PLAN</strong></td>
<td>2004-05</td>
<td>0</td>
<td>25</td>
<td>25.00</td>
</tr>
<tr>
<td></td>
<td>2005-06</td>
<td>179</td>
<td>13</td>
<td>3.00</td>
</tr>
<tr>
<td></td>
<td>2006-07</td>
<td>1,656</td>
<td>62</td>
<td>44</td>
</tr>
<tr>
<td><strong>TOTAL DURING X PLAN</strong></td>
<td>1,835</td>
<td>100</td>
<td></td>
<td>72</td>
</tr>
<tr>
<td><strong>XI PLAN</strong></td>
<td>2007-08</td>
<td>1,816</td>
<td>119</td>
<td>113</td>
</tr>
<tr>
<td></td>
<td>2008-09</td>
<td>887</td>
<td>90</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>2009-10</td>
<td>966</td>
<td>70</td>
<td>63</td>
</tr>
<tr>
<td></td>
<td>2010-11</td>
<td>1,484</td>
<td>131</td>
<td>126</td>
</tr>
<tr>
<td></td>
<td>2011-12</td>
<td>1,844</td>
<td>245</td>
<td>234</td>
</tr>
<tr>
<td><strong>TOTAL DURING XI PLAN</strong></td>
<td>6,997</td>
<td>654</td>
<td></td>
<td>616</td>
</tr>
<tr>
<td><strong>XII PLAN</strong></td>
<td>2012-13</td>
<td>1,239</td>
<td>175</td>
<td>175</td>
</tr>
<tr>
<td></td>
<td>2013-14</td>
<td>6,276</td>
<td>252</td>
<td>252</td>
</tr>
<tr>
<td></td>
<td>2014-15</td>
<td>Scheme subsumed with AMI sub-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
During the X Plan period, 1,835 projects were sanctioned with a budget allocation of Rs. 100 crores, of which 72 crores was spent. In the XI Plan period, the number of projects sanctioned increased to 6,997, and the budget allocation increased to Rs. 654 crores, with the expenditure at Rs. 616 crores. During the XII Plan period, the number of projects sanctioned reduced to 2,555, with a budget allocation of Rs. 676 crores with the actual expenditure of only Rs. 519 crores. In 2014-15, the scheme was subsumed with the Agricultural Marketing Infrastructure (AMI) sub-scheme of ISAM. Overall, the table highlights an increasing trend in the number of projects sanctioned and budget allocation over the plan periods. However, the actual expenditure during the XII Plan period was lower than the budget allocation, indicating a need for better implementation and monitoring of the scheme.

2.2.4.3 Marketing Infrastructure Fund

- An Agri-Market Infrastructure Fund (AMIF) is approved with a corpus of Rs. 2000 crore for developing and upgrading agricultural marketing infrastructure in the Gramin Haats and APMC Markets (Ministry of Agriculture & Farmers’ Welfare 2020).
- Agriculture Infrastructure Fund, an Rs. 1 lakh crore fund, was announced in 2020 for farm-gate infrastructure for farmers from 2020-21 to 2029-30. The fund covers infrastructure development projects at the farm gate and infrastructure aggregation locations for post-harvest management. The fund intends to address the issue of low private investment overall and poor investment in creating infrastructure that connects farmers to the market. A facility is created for financing medium- to long-term debt investments in successful post-harvest management infrastructure and community farming assets programmes through Interest Subvention and Credit Guarantee Costs. (Ministry of Agriculture & Farmers’ Welfare 2020).
- Latest mandi price information is disseminated from the Agmarknet portal through Agmarknet portal (http://agmarknet.gov.in), Kisan Suvidha App, UMANG App, DD Kisan Channel, Kisan Call Centre etc.

The inadequacy in marketing infrastructure is one of the most oft-quoted challenges in the agricultural marketing system of the country. As seen in the above section, the government is running multiple schemes and funds to facilitate the development of marketing and post-harvest infrastructure. Due to the fragmented nature of agriculture markets in the country and state control of government mandis, we have observed that there is limited knowledge and database on the status of marketing infrastructure other than storage infrastructure. Therefore, assessing the gap in the existing marketing system at the district or state level is difficult.
Chapter 3: Literature review

In this chapter, in-depth exploration is done into the existing literature on aiming towards achieving a clear understanding of all the four issues identified with primary issues, changes in policy approach, different initiatives by the government and roadblocks in reforms of the sector through the work of renowned scholars.

3.1 Agriculture Credit

3.1.1 Agri-credit as a medium for inclusive growth of the farm sector

The future of Indian agriculture greatly depends on the success of small and marginal farmers in improving their ability to utilise their resources, such as land, to increase agriculture productivity and income. Birthal et al. (2014) in their study on the income sources of farm households, found that small farmers often indulge in non-farming activities as income-generating activities earning close to 50% of their income along with farming activities. They found the non-farm sources positively correlated with total income, and for the farm households with less or no land, the non-farm sector may offer prospective entrance points to raise their level of income. One can help these farmers invest more in farming activities through affordable credit, thereby increasing agriculture productivity. By improving the market base for farmers, one can also improve their profit margins and help these farmers earn more income through farming activities than resorting to non-farming activities. For this to happen, one must address the various challenges that the farmers face, such as access to credit, input costs and market linkage, to name a few (Kumar, et al. 2020). Their paper also mentions that the paucity of credit to cover input prices, along with other factors like a high crop insurance premium and a delay in paying out the farmers’ claims, has left the farmers in a liquidity constraint that they cannot overcome on their own. Birthal et al. (2016) concluded that policy interventions should be made to accelerate and promote high-value crop cultivation as a potential solution to increase the farmers’ income. Nevertheless, the farmers require enhanced access to credit, inputs, information, technology and services to make use of this potential, emphasising the fact that access to credit and other factors mentioned can eventually help farmers to become self-sustainable and lead to inclusive growth of the agriculture sector at large.

In a study to understand the determinants of rural households’ choice of credit (Kumar et al. 2015), it was found that the initiatives from the government managed to improve the uptake of institutional credit, and the financial inclusion has shown improvement. However, there are regional disparities along with the presence of informal agencies disbursing credit, which is still existent and becoming a challenge for the governments. Some reports such as NSSO and NAFIS describe the relation between small farmers and non-institutional sources of credit. While NSSO data shows that share of institutional sources of loan increases as the land size increases, but it is also observed that farmers with small amounts of loan have a different story (NSSO, 2019). Be it low income, less capacity of repayment, low credit score, consumption or household expenses requirement, this section of farmers is forced to go for non-institutional sources as it does not have rigid application process, upper limit of loan amount and requirement of high credit score (NAFIS, 2016-17). Among non-institutional...
sources, relatives and friends are the most preferred sources of credit, followed by moneylenders and landlords exposing them to exorbitant interest rates.

There are some studies (Ramakumar and Chavan, 2014) that show that credit diversion towards large scale agricultural activities by urban based corporates and businesses happen regularly, combined with large individual amounts of loans; implying that the share of large farmers in agriculture credit increases, even as it shrinks for the small and marginal farmers. In fact, Elias, Musa Ahmad, & Patil (2015) observes that variables such as landholdings, educational status, irrigation facilities, income level and gender are the significant factors in determining the agricultural credit access of the small and marginal farmers from the banks.

3.1.2 Background: Efforts towards advancing agriculture credit

While agriculture credit had been in the policy radar for a long time since independence, the real push came in 1980s, when a substantial focus on the credit delivery mechanism and credit policy designing was initiated. This was because post the bank nationalisation, the banking sector saw enormous expansion of banks in rural unbanked locations, enhancing the agriculture credit, which is also credited to have reduced poverty across the country (RBI, 2008). However, by the end of the 1980s, banks started to face challenges of the large non-performing assets and poor capital base in the light of new competitive and reform-oriented environment. This led to an unintended faltering on their role of credit delivery for the agriculture sector. This led to a further impetus on agriculture credit policy, which witnessed major transformation promoting financial soundness and operational efficiency specially for the rural financial institutions post-1990s. These efforts and the new challenges led to the introduction of KCC Scheme in 1998.

The share of indirect credit in total agriculture credit also grew largely since 2000s due to the changes in definition of ‘priority sector’ and the availability of loans for investment in allied activities, irrigation system, agriculture machinery etc. This marked a shift in the policy approach towards agriculture and building capacity in farmers in terms of adopting newer technologies, farming practices and building relations with agriculture businesses (Ramakumar and Chavan, 2014). Another aspect of credit policies is to encourage banks to open branches in rural and semi-urban locations, which got further push from relaxing the branch authorization guidelines in 2017, creating a Financial Inclusion Fund (FIF) to support the technology and capacity building of the banks. All of this led to an increased number of banks in every region and state of the country, particularly in last two decades (RBI, 2021).

In 2004, a Comprehensive Credit Policy was announced to increase the institutional credit to agriculture from all lending institutions by 30% annually and even providing credit to tenant farmers and oral lessees. It also included a host of debt relief measures such as debt restructuring, one-time settlement and loans to pay off the borrowings from money lenders (Economic Survey, 2004-05). In 2004, the Government of India announced a series of policy initiatives to double the agricultural credit through financial institutions, and to achieve this, it increased the agriculture credit by 30% in 2004-05 and another 30% after it was successful in achieving the 2004-05 target (Golait, 2008). This proved to be successful in expanding the reach of the formal credit system.
An Interest Subvention Scheme was introduced in 2006-07 by the government on the short-term credit extended to farmers (NABARD, 2022). The Union budget for 2011-12 announced an additional subvention of 3% for prompt repayment by farmers. Further innovation in terms of financing farmers through Joint Liability Groups (JLGs), ‘aggregation models’ and developing Primary Agricultural Credit Societies into multiservice centres to meet the credit and non-credit services required by the small and marginal farmers took place subsequently (Subbarao, 2012). With all these interventions and innovations incorporated, KCC became the dominant scheme for crop loan (short-term and long-term) through an institutional source.

3.1.3 Kisan Credit Card (KCC) scheme

Over time the Scheme has gone through various innovations and changes to the original design and therefore scholarly understanding of the Scheme must be read in accordance with the design of the Scheme prevailing at the time of writing. The earlier literature suggests to that the Scheme has been fairly successful. Nahatkar et al (2002), for instance, in their study of KCC in MP, showed that many of the existing roadblocks for farmers in availing institutional sources of credit was taken care of through KCC, which offered a simplified, institutional source of availing loans from banks, facilitating availability of timely credit to the farmers. This view was echoed in the work of Singh and Sekhon (2005) where the authors claimed that farmers were generally satisfied with KCC and in particular, the time taken in advancing credit, application procedure and behaviour of bank officials under the Scheme. However, they also noted some of the drawbacks of the scheme and suggested that the KCC beneficiaries faced lengthy and tedious paperwork, difficulty in obtaining security documents, and lacked the presence of helpful intermediaries. The low education levels of the farmers also added to the constraints.

Later studies examined KCC’s new policy frameworks. For instance, Patra and Sahu (2011) examined KCC Scheme when RBI had initiated the interest subvention on loans of up to 3 lakhs. Laxyapati (2013) studied the Scheme after the introduction of a new policy namely, 10% and 20% of the loan amount was to be added to the loan, to cover consumption and asset maintenance respectively, as well as the introduction of RuPay cards along with. Most recently, Singh and Prakash (2022) reviewed KCC when the most recent policy shifts have taken place under which animal husbandry and fisheries have also been included under the ambit of the Scheme. All these studies show that this Scheme has been generally beneficial to the farmers. The benefits offered by the scheme such as high frequency of withdrawals and repayment, access to financial transactions, benefit of early repayment of loan, revolving nature of credit availability, flexibility to withdraw cash, and low interest rate are the factors attracting borrowers to avail KCC.

Highlighting the advantages of the Scheme, Bista et. al. (2012) and Laxyapati (2013) made a common inference that a major benefit of the KCC loans is that the with increase in access to credit farmers are able to enhance their input and administer higher doses of inputs like fertiliser, pesticide, labour, irrigation waters, etc. leading to increase in yield and higher gross returns per hectare amongst the KCC beneficiaries, as compared to those without KCC, in addition to the lower transaction costs.
incurred on legal documentation, absence of commission agents and travel costs on visits to banks (Bista et al. 2012).

Different studies have analysed a positive correlation between access to agriculture credit or adoption of KCC and education status, landholding size, irrigation facilities, asset base and income level. The higher value of these variables indicates better access to credit (Shrotriya and Yadav, 2017; Bista et al, 2012). The impact of education has revealed the need for farmer capacity building and studies have found that borrowers may benefit from training on financial institution procedural formalities, improved techniques of farming in order to gain access to the KCC scheme (Kumar et al, 2011; Bista et al, 2012).

3.1.4 Challenges and recommendation regarding KCC

The literature lists down three types of challenges in the implementation and design of the KCC Scheme. Firstly, the issue of non-repayment of the loans, because of which farmers with some form of collateral are provided loans easily as there are higher chances of repayment (Prakash and Kumar, 2016; RBI, 2019). The second issue is that of diversion of funds from its desired end-use in agriculture to non-farm use and other type of consumption (Ramakumar and Chavan, 2014). According to one study, 17% of the average KCC loan was used for non-production (consumption) purposes (Patra and Sahu, 2011). Adding another perspective to the discourse, Chanda (2020) notes that given the low interest rate offered for these loans and the anecdotal evidence on borrowers making arbitrage gains, these loans are being used to finance consumption more than actual agricultural needs. The third challenge is that of insufficient credit itself. Shrotriya and Yadav (2017) in their study of KCC in Rajasthan observe that insufficient credit limit, higher interest rate, non-availability of loan on time are noted as the major problems in the uptake of the Scheme. There also had been studies that show that sometimes access to formal agriculture credit depends on the caste of the borrowing farmers (Kumar 2013, Kumar 2016).

There have been many studies that have offered ideas to make the Scheme more efficient and inclusive. Shrotriya and Yadav (2017) suggest that in order to attract more farmers under the KCC scheme, the transaction cost should be brought down by minimising the documentation procedure for opening KCC accounts and removing the presence of commission agents in accessing banks. This was echoed further more recently, where the scholars advised arresting the role of brokers (Mehta, Trivedi and Mehta, 2016). Singh and Sekhon (2005) suggest transaction costs with respect to issuance of KCC are lower in cooperative banks as compared to commercial banks, a finding which is also confirmed in another study focusing on cost of KCC between the two types of banks in Karnataka (Jainuddin et. al., 2015).

Patra and Sahu (2011) proposed that the use of biometric cards, the deployment of Banking Correspondence, the simplification of procedures, financing through Joint Liability Groups, and the implementation of a Weather-based Crop Insurance Scheme with cyclical credit could go a long way toward providing relief to distressed farmers. Prakash and Kumar (2016) suggest a review of existing credit limits in accordance with the production demands, in addition to proposing to improve
connectivity to markets for enabling farmers to diversify towards higher valued, capital intensive crops as the way forward. NABARD conducted a PAN India study on ‘KCC Scheme’ conducted by NABARD in the year 2015 and subsequently published as Occasional Paper in 2016 (NABARD, 2017), to assess the implementation of KCC scheme in six states. Some of the major suggestions given in the Report included calculating SoF appropriately on the basis of cropping pattern, higher adoption of RuPay cards by instilling confidence in technology amongst farmers through organising financial counselling by banks, introducing bifurcation of KCC loan into crop loan, consumption and asset maintenance component.

3.2 Insurance

Crop insurance can be extremely important in supporting farmers’ economies because crop production in India is influenced by the whims of nature and suffers significantly from droughts, floods, cyclones, hailstorms, pest and disease attacks, and cyclones.

3.2.1 Historical background

S. Chakravarti was one of the first to work on the concept of crop insurance in India in 1920. He suggested an agricultural insurance plan primarily based on the “weather approach” (it meant that the assessment of the indemnity was made each year based on the weather conditions that year rather than the individual needs of the farmers) with a scheme designed to cover insurance for buildings, granaries, and agricultural equipment, and insurance for cattle and crops. From 1946-1948, policy planners undertook a study to understand the viability of crop insurance in the Indian environment, based on which the crop insurance bill was introduced in the parliament in October 1965 (Reyes, et al. 2017). This draft bill was then assigned to an expert committee chaired by Dharam Narain, and after deliberations, the first insurance scheme was introduced in Gujarat in 1972 (Chattopadhyay and Lal 2007).

After this, the study on the design and implementation of the crop insurance intensified with various expert committees looking into the subject. In one such committee headed by V M Dandekar it was observed that even though “individual approach” of crop insurance (described the assessment of the indemnity that must be made separately for each person based on the concerned farmer’s actual crop yield each year in comparison to his or her usual output) was ideal, it could not be practiced in the country due administrative difficulties. Based on these recommendations provided by the Dandekar Committee, a Pilot Crop Insurance Scheme (PCIS) was introduced with homogenous area approach in place in 1979-80. Moreover, the Comprehensive Crop Insurance Scheme (CCIS) was introduced from 1985 to 1999 (Singh 2013).

The National Agriculture Insurance Scheme (NAIS) was established in 1999 with an area approach for common disasters and an individual approach for localised disasters (Raju and Chand 2008) and which lasted until 2011. Based on weather index parameters based on area approach, a pilot weather index-based crop insurance plan (WBCIS) was announced in 2007. During this period, NAIS was the principal crop insurance system that was implemented throughout the country at the national level and is
overseen by a specialised implementing agency, Agriculture Insurance Company of India (AIC), which was founded by the government in 2003.

Based on the area approach, the Modified National Agriculture Insurance Plan (MNAIS) was launched in 2011, and lasted five years, from 2011 to 2015. On February 18, 2016, the Prime Minister Crop Insurance Scheme (Pradhan Mantri Fasal Bima Yojna, PMFBY) and the Restructured Weather Index-Based Crop Insurance Scheme (RWBCIS) were implemented nationwide using an area methodology (Mukherjee and Pal 2017). This period was notable for private sector insurer participation in crop insurance through PPPs and advanced crop insurance technology such as remote sensing and satellite images.

In India, two main agricultural insurance systems are now in operation: PMFBY and RWBCIS. The government adopted these schemes in February 2016 with significant influence over the insurance product’s design, subsidy level, and sum insured. These insurance systems cover crop risks caused by climate change in agricultural production (Singh, Anand and Khan 2018). The state governments have complete authority to choose PMFBY or RWBCIS or both in their particular states. India has the world’s most extensive agriculture insurance programme, with 25 million insured farmers (Bhushan and Kumar 2017), though 95 million farmers are uninsured as a result of insurance design issues and disruptions in claim payment (Mahul, Verma and Clarke 2012).

The primary purpose of PMFBY is to provide farmers with insurance cover and monetary support in the event of yield damage (Bhushan and Kumar 2017). The PMFBY offered farmers with risk protection in the event of yield losses in any of the pre-notified crops due to pests, natural disasters, or illnesses. The primary feature of the PMFBY scheme is the compulsory enrolment of loanee farmers in the specified area (FICCI 2018). Mukhopadhyay et al. (2019) observe that PMFBY contains more farmer-friendly measures than NAIS and MNAIS and has significantly decreased the farmers’ premium burden and increased risk coverage so that more farmers can obtain crop insurance. PMFBY has supported the deployment of modern technologies to accurately measure losses and make compensation to farmers as quickly as possible. However, farmer wealth is an important element in gaining access to PMFBY.

The WBCIS is a substantial solution for weather hazards Biswas et al.(2009) and acts as catastrophe insurance against unfavourable weather events in agriculture (Bjerge and Trifkovic 2018). WBCIS emerged as an alternate option for farmers since it addresses the various limitations of traditional agricultural insurance Nair (2010) by insuring the weather risk in agriculture (Rao 2010). Weather parameters assisted in faster claim settlement and reduced operating costs associated with analysing claims (Clarke, et al. 2012).

On the other hand, the indemnity payments are initiated by dependable and independently verifiable predefined weather indexes that are closely relevant to local yields (Skees 2008). WBCIS provides an administrative benefit over traditional farm insurance and has gained favour in developing areas where conventional agriculture insurance performs poorly (Rao 2011).
3.2.2 Challenges

Since the country's founding, multiple crop insurance programmes have been introduced, but each programme has its own set of shortcomings and issues that numerous academics have noted. Until 2011, just 10% of India's farmers were covered by the agriculture insurance policy (Deshpande 2017). There has been considerable research in the crop insurance sector in last several years. In the context of climate change, Panda (2013) evaluated the importance of crop insurance for farmers' social protection. In Vidharbha region in the state of Maharashtra, Gaurav (2015) analysed insured agricultural households and discovered that smallholder households have less access to insurance than wealthy farmers. Ward and Makhija (2018) empirically explored drought risk management for Odisha farmers and discovered that farmers are less interested in crop insurance. Jain and Dharmaraja (2019) proposed a mathematical model to cover the stated risk for better crop insurance penetration. Bhoi and Dadhich (2019) proposed a composite insurance system to cover the risk of market and agricultural failure. According to an extensive study by Ghosh et al. (2019), farmers are more likely to pay a premium for faster claim settlement.

Regarding farmers’ ease to access crop insurance, Mwinjaka et al. (2010) observed that small and marginal farmers cannot access the crop insurance as they are often perceived as high-risk debtors mostly due to their low credit ratings. Adding to this, Arora and Birwal (2017) note that affluent farmers are more capable to access agriculture insurance than underprivileged farmers.

Another aspect is the farmers’ perception of these crop insurances. There is considerable dissatisfaction among majority of farmers with the compensation mechanism based on which the estimation of insurance claims is done (Bhatnagar, Perception of farmers towards agriculture insurance schemes 2018). Sundar and Ramakrishnan (2015) explain that this dissatisfaction is one of the primary reasons for the minimal uptake of agriculture insurance, especially amongst disadvantaged farmers (Panda 2017). Another reason the farmers are not opting crop insurance schemes in India is the unappealing design of agriculture insurance (Rajeev, Bhattacharjee and Vani 2016). Because of the increasingly sophisticated mechanism of insurance policies at the practical level, the administration of insurance schemes could have been much better (Kelkar 2006). Thus, the lack of participation of the farmers in agriculture insurance due to the lack of confidence in the compensation structure and design of the same caused a significant number of risks associated with crops to go uninsured (Ward and Makhija 2018).

The primary drawback of recently introduced PPP-based agriculture insurance programmes relates to private insurers who have made sizable profits by covering agricultural risks. However, farmers have not reaped the benefits of agriculture insurance by receiving adequate and appropriate crop failure claims. Ghosh et al. (2019) understand that private insurers have kept insurance premiums in good years while paying out large claims to farmers in tough years. During 2016-2017, private insurance businesses generated around Rs. 7,000 crores in profit, with a net operating margin of 25%, where the private insurance companies also stated that a 25% margin is not viable in a terrible drought year since losses and indemnity pay-outs can exceed Rs. 50,000 crores.
Since 1972, India has had agricultural insurance policies in place, but due to operational issues, each programme has been inconsistent, ineffective, and unable to cover farmers adequately. In each decade from 1972 to 2016, the Indian government unveiled a new agriculture programme while acknowledging the shortcomings and drawbacks of earlier initiatives. Every new insurance plan has enhanced components for successful implementation that needed to be added to agriculture insurance programmes in the past. Agriculture insurance programmes have never been related to everyday life on the ground and have never been successful in resolving problems with execution and operation (Chatterjee, Chatterjee and Das 2005). Having said this, it is equally important to note that due to the magnitude of agriculture and their innovativeness in the design of farm insurance, India has a vital role in agriculture insurance (Ghosh and Yadav 2008). Additionally, India’s experience with crop insurance has taught it valuable lessons for its agricultural insurance policy and has influenced other nations to consider implementing agriculture insurance systems in terms of strategy.

Agriculture insurance, as can be seen, is a crucial policy risk management tool that is out of reach for most farmers in the country. It plays an essential role in the financial inclusion of impoverished households (Taylor 2016) and supports farmer livelihood stability through risk management in agriculture (Rao, et al. 2016). Though farmer participation in the agriculture insurance programme has not increased to the projected level, the government has been promoting agriculture insurance since its start by subsidising premium payments. Furthermore, agricultural systems could perform better on all fronts, including administrative, financial, and economic performance. Agriculture insurance schemes' financial performance has suffered from ongoing losses, while economic performance has declined in claim payments and collected premiums, owing to the low impact of insurance schemes, despite massive subsidisation.

3.3 Storage

The fact that India is a significant producer of food grains and cereals, as well as meat, dairy and eggs, press the need for India’s need for top-notch storage facilities if it is to utilize its food products to the fullest. Ironically, one of the food security problems India faces is the post-harvest losses due to its inability to preserve food rather than the production of food. If handled properly, post-harvest storage of food products can play a prominent role in empowering the socioeconomic conditions of a developing country like India (Mobolade, et al. 2019). Storage infrastructure is a mix of scientific and technological requirements to prevent the degradation of agricultural produce and ensure the process of developing physical infrastructure and transportation. Warehousing facility allows farmers to transact at choice, avoid immediate sale in a surplus environment and enable them to avail institutional credit to meet their immediate financial needs. Proper availability of storage facilities is crucial to fix the imbalance between the demand and supply of agricultural produce (Ministry of Agriculture and Farmers Welfare 2016). Excessive output results in a surplus as low market prices are insufficient to cover harvesting, labour, and transportation costs. Another benefit of building a warehousing facility is to improving farmers’ access to institutional credit through warehouse receipts, reducing wastage and price stabilization of agricultural commodities.
3.3.1 Need of an efficient warehousing system

The development of necessary infrastructure for marketing and storage facilities addresses the information asymmetry among producers about its usage and benefits. Keeping up with the increasing demand, agriculture productivity has greatly improved using new techniques. Any attempt to generate more may possibly be effective with efficient distribution mechanisms. A sound food-distribution system is essential since production alone does not equal food availability. The missing prerequisite is physical and effective market linkage (Kohli 2019). Now the need arises for making the existing supply chain effective to reduce post-harvest losses, preventing wastage of human resources and overall sector growth (Bhoi and Dadhich 2019). Chatterjee (2018) assessing the impact of affordable access to storage infrastructure on agriculture yield, found that farmers are encouraged to improve their production with better access to storage facilities, implying that post-harvest losses are a major concern for them.

Even though India is the largest producer of fruits and vegetables worldwide, the export of these commodities is very low due to damage and wastage of horticulture products during transit and lack of storage facility (Tiwari, Afroz and Kumar 2021). To overcome these issues, significant expenditures are necessary in agricultural market development, grading and standardisation, quality certification, warehouses, cold storage, and other postharvest management activities. Infrastructure development would seek and encourage private-sector engagement. Shah (2015) suggested that soft financing facilities for developing agricultural go-downs in prospective sites should be promoted, as should subsidies and tax breaks for such enterprises.

3.3.2 Disadvantages of inadequate storage infrastructure

Cardoen et al. (2015) cites a study conducted by ASSOCHAM in 2013, where it is stated that India incurs a loss of Rs. 2 trillion every year post the harvest of fruits and vegetables due to the poor cold storage facilities and food processing units. Such wastage of food products can be prevented to a great extent by improving the storage facilities of the country. The case of grain storage is no different either. The grains have to be stored for a much longer period after their harvest (Chigoverah and Mvumi 2016) than vegetables and fruits. The monitoring of the grains during these periods are also minimal which makes proper storage conditions a necessity (Manandhar 2018).

The availability of adequate and affordable storage infrastructure is essential for preventing wastage of crop production, reducing food losses, and handling price volatility and seasonal fluctuation for farmers. With the majority of small and marginal land holding size of lands, dependence on credit and repayment of debt after selling their produce, many farmers are forced to sell their produce soon after harvest (Chatterjee 2018). Moreover, the farmers depend on local traders, middlemen etc., to sell their produce due to inefficiencies in agriculture marketing (Chand and Singh 2016). Therefore, farmers need more storage facilities to take advantage of price dynamics and seasonal variation. In order to capitalize the increase in productivity to be replicated into gain in income.

Storage loss can happen due to multiple factors ranging from biological and physical factors to socio-economic factors. Biological and physical factors include insect and pest attacks and temperature and
moisture changes, respectively, which can be prevented by the use of technologies. Socio-economic factors, on the other hand depend on other interlinking factors such as the land size and income generated by the farmers, accessibility to roads and markets and the required duration of storage of grains (Gitonga 2013).

Basavaraja (2007) conducted a study wherein the post-harvest loss incurred in wheat was studied for Karnataka. It was found that the maximum losses occurred during the storage process, caused by factors such as unavailability and structural inadequacy, along with improper drainage and pest controlling. Even though it has been more than a decade since this study was conducted, the conditions of the storage operations in India have not witnessed a radical change. For instance, Gardas et al. (2018) identified the causal factors of the post-harvest losses in vegetables and fruit crops in the country and were studied with their influences through the interpretive structural modelling approach. The most significant variables were determined to be a lack of connections between farmers and processing units, a lack of technology and advanced food processing techniques, and a lack of connections between industry, government, and institutions. Gardas et al. (2018) also did a study to identify and model the critical causal factors of post-harvest losses in India’s fruit and vegetable supply chain for which they identified fifteen causal factors. After analysing these factors for cause and effect, to identify the most critical factors among these, it was found that lack of proper storage, packaging facilities and insufficient infrastructure were some of the most critical factors identified as the ones that impact the post-harvest losses.

Thus, huge losses can happen due to insufficient storage facilities. Generally, it is observed that the farmers grow crops and harvest them in a particular season, and the harvest is then stored as reserves of food and sold gradually. Most farmers use traditional modes of storages like Kanaja, Kothi, Sanduka, Gummi etc. to store their produce. Around 50%-60% of the storage of grains in developing countries like India, happens through traditional storage structures which cannot guarantee the preservation of crops from pests for a very long time as they are made from materials such as grass, wood, mud etc. (Kumar and Kalita 2017).

One of the reasons for the usage of traditional structures is the price parameter. These containers are much cheaper and more affordable than modern technology storage containers and the small farmers often do not have that proportion of income to invest in such advanced storage facilities. Although these traditional containers are great options for storing food produce, they do not prevent the possibility of pest attacks such as from insects and rodents. It is here that modern technologies pitch in. Modern and traditional storage systems could be combined, and traditional storage structures can be modified to make containers that can prevent the possibilities of pest attacks and not make it expensive for the farmers. The option of using chemical methods of preserving food products should be endorsed only a little even though they have high success rates because it has the usage of chemicals which will leave behind toxic residues. Traditional sustainable storage processes amalgamating with modern technology can be a solution for sustainable and effective storage.

Another issue identified in the literature is that production-rich regions are not able to expand their reach in congruence with the demand. Government restrictions and impediments such as bad roads,
bureaucratic corruption, a lack of information about managing perishable products, and a shortage of electrical power supply critical for cold storage facilities have led to companies’ inability to access cold storage systems (Sivaraman 2016). Kohli (2019) argues that without the cold-chain, the result is a local glut, in which surplus production to near-farm demand has a negative impact on price, or there are no buyers at all.

India faces a paradox with surplus production in some areas, while many face acute food shortages. Apart from affecting food security and hunger issues, the wastage of the agriculture produce affects multiple other things, like the availability and price of commodities and country’s export potential. We can utilize our export opportunities with cold storage facilities, giving rise to economic surplus. Along with efforts in addressing the gap in storage facilities, there is an equal need to develop markets by building efficient supply chains and reforms in agriculture marketing. Policy framework and its implementation is therefore central to address these issues.

3.4 Agriculture Marketing

The word “agricultural marketing” is used indiscriminately to denote an umbrella label that includes all of the processes linked to the purchase, collection, grading, storage, food and agro-processing, transportation, financing, and sale of the agricultural produce (Ministry of Agriculture and Farmers Welfare 2016). Marketing aids in directing other operations in farming to maximize value realisation and further cost optimization. Various studies and government reports have pointed out the shortcomings of the agricultural marketing system in India. Scholars have reviewed the drawbacks of the marketing system, the deficiency of marketing system due to legal barriers, restrictions in trade and transportation, and entrenchment of unorganized traders sand commission agents and assessed several reforms brought by the government.

3.4.1 History of agriculture marketing in India

Agriculture marketing system in India is characterised by compulsory licensing of commission agents and traders and preventing farmers from selling their farm produce directly to retailers, bulk manufacturer and processor, but selling through regulated market yards under APMC Act. While serving the purpose of ‘protecting’ farmers during 1950s and 60s, the APMC Act’s influence on farmers’ welfare is considered to have been significantly negative in the literature. Glaring inefficiencies and harm to the farmers’ well-being have been themes in scholarship on agriculture marketing system for more than two decades now.

An exorbitant amount of government control exists in formulating agriculture policies at different government level through departments, boards and institutions. While it is in the purview of central government to conceptualize policy and allocation of funds, it is through state governments that these policies are administered and implemented. Central and state governments in India can decide on the agriculture sector for credit, inputs, technology, infrastructure, market access and trade policy.

Post-independence, Agricultural Produce Marketing (Regulation) Act was enacted to keep in check the malpractices in markets, exploitation by middlemen, ensuring reasonable prices to farmers and
maintaining a competitive environment in markets. On the one hand, country witnessed high growth in the agriculture sector through a farmer-friendly policy approach, usage of technology-led growth, higher productivity, and therefore increase in farm income; on the other hand, various inefficiency crept in through bureaucratic control, politicisation and entrenchment of traders and middlemen (Chand 2012).

3.4.2 Challenges in marketing system

The regulated markets controlled by the government set up to ensure reasonable gains to the farmers ended up working against the farmers (Chahal 2018). Current agricultural marketing practices are fragmented across the country, governed through numerous laws, licenses, and fees, influenced by multiple intermediaries taking away the profits from the farmers, low number of licensed traders with a lack of competition in the market and suffering from acute lack of required infrastructure restricting proper ‘folk to farm’ market access for farmers.

A small farmer with a low quantity of produce is compelled to take the prices set up by the APMC-licensed broker. Over-regulation in the sale of products within a state or a district impedes better price realisation for farmers combined with the structural issues faced by smallest and marginal farmers in the country. Excessive control on demarcation, establishment and development of the market, the sole authority for the supply of facilities and services, unfair trade practices in favour of licensed traders and middlemen, and monopoly of market functionaries are some of the structural failures of the present agriculture marketing system (NABARD 2018).

Lack of income growth for farmers is caused due to the absence of relevant marketing information on demand-supply of agricultural commodities. (Ministry of Agriculture and Farmers Welfare 2016). Also, when the produce or surplus produce does not reach the appropriate market and does not receive remunerative prices, it is discouraging for those involved in farming as it is not profitable (ibid.).

The system of regulated mandis has impeded price realisation for farmers and created a unified national market for commodities. Due to the fragmented nature of the market, and geographical and logistical challenges, intermediaries began to play an essential role by providing the missing facilities, building an interpersonal relationship with the farmers and establishing their influence on markets and farmers. The failure of marketing reforms can be attributed to the nexus between politically influential people occupying important positions in marketing boards and committees colluding with licensed traders and commissioned agents within the regulated markets (Economic Survey 2015-16).

Mandi charges raise the transaction fees substantially for the sale of farm products, yet the standard of services was subpar (Directorate of Marketing and Inspection 2015). A report by the committee on agricultural reforms to promote reforms in agricultural marketing observed that the present system ‘suffers from a high incidence of market fees/charges and lack of competition with a long chain of intermediation’ (Ministry of Agriculture 2013). An average of four to six intermediaries exists between the producer and the final consumer without any value addition (Chand 2012). There are multiple fees in the functioning of APMCs, and traders, commission, and warehousing agents all are required to pay
the market fees in the form of taxes. These levies and taxes differ from state to state and do not come under the purview of the state legislature, so there is no accountability of APMCs for using this fund (Economic Survey 2015-16). The restrictions on private trade through the APMCs have made it challenging for direct connections between farms and merchants to develop, limiting the ability to diversify production at the farm level to satisfy the rising demand for higher-value items (Pingali et al. 2019). Gardas et al. (2018) investigated the agriculture supply chain’s challenges; limited integration among national agriculture markets, high marketing costs, and limited marketing infrastructure are major factors affecting its performance.

3.4.3 Inadequacy in marketing infrastructure

The majority of APMCs lack the essential market infrastructure, such as automatic sorting, grading, weighing, packing machines, buildings to house the machinery, trading halls, warehouses, electronic weighbridges, weighing machines, surveillance cameras, backup power sources, etc., which prevents farmers and sellers in these mandis from being integrated and provided with price information. Chand (2012) found out that the growth in marketed surplus is much higher than the number of markets giving buyers/traders an edge over sellers. Only one-fourth of the regulated markets have standard drying yards, and only two-thirds of regulated markets have covered open auction platforms. Less than one-tenth of markets have cold storage units, less than one-third have grading facilities and digital weighbridges are only available in some markets (NABARD 2018). Cold storage and grading facilities are not up to the mark, leading to many agricultures produce wastages (Gardas, Raut and Narkhede 2017).

3.4.4 Control by the government

Directorate of Marketing and Inspection (2015) outlines the significant constraints of the present agricultural marketing system as highly fragmented, insufficient number of markets, inadequate marketing infrastructure, high incidence of market fee/charges, high post-harvest wastages, less remuneration to the farmers and high intermediation cost, market information asymmetry and inadequate credit facilities.

The agricultural marketing system of the country is riddled with multiple inefficiencies, i.e., distressed sale of agriculture commodities at the village level, poor facility of grading, packaging and assaying, inadequate market infrastructure, malpractices in the marketing of agri-produce and information asymmetry (Ministry of Agriculture and Farmers Welfare 2016). The present system has paved the way for the exploitation of farmers by traders, and middlemen, institutionalised by government policies and practices (Kapur and Krishnamurthy 2014). The state APMC Act provides for a State Agriculture Marketing Board, which comprises appointed government officials who then decide the market areas and committees.

Through institutions such as FCI and the Commission for Agricultural Costs and Prices (CACP), the government decides prices of major agriculture commodities be procured and distributed through Public Distribution System (PDS) at subsidised prices. Predetermined prices, assurances of purchase, and crop-specific subsidies for inputs such as fertilisers, electricity and irrigation affect the decisions
of sowing and farming patterns. This input support from the government has established a practice where the actual cost of production is hidden, crop choices is distorted and there a vicious circle of low agriculture productivity and small landholdings (Anand, Shah and Neema 2020). And as mentioned, the farmers are compelled to sell their produce only in government mandis.

3.4.5 Reforms in the agricultural marketing system

Given the inefficiencies, a Model APMC Act was introduced in 2003 and formulated by a committee in consultation with state governments based on the recommendation of an Expert Committee by the Ministry of Agriculture. The model Act was shared with all the states for implementation to address the deficiencies in the earlier marketing system and allow direct marketing, contract farming, and markets in the private and cooperative sectors.

The refusal of states to change the mandi system, a lack of excitement for the Model Act, and the difficulty and expense of securing land for market establishments are the key barriers preventing the private sector from establishing an alternative market infrastructure (Chand 2012). Even with various efforts and support from the central government, state governments did not implement these reforms. On the contrary, cosmetic changes were introduced, provisions of the model Act were diluted, and steps were taken to defeat the goals of the reforms while the intermediaries like commission agents and traders multiplied their influence and obstructed the changes brought by the Act. Burman et al. (2018) believe that these reforms in the marketing system have failed to eliminate monopolistic and anticompetitive behaviours in trading agricultural goods among states. However, some states, like Maharashtra, Karnataka, Andhra Pradesh and Gujarat, have taken initiatives. Farmers’ markets, like Apni Mandi in Punjab, Kisan Mandi in Rajasthan, Hadaspur Vegetable Market in Pune, Rythu Bazaars in Andhra Pradesh, Uzhawar Santhai in Tamil Nadu and Krushak Bazaars in Odisha are examples of the initiatives taken by the states to help farmers find a marketplace for their produce through which they can be benefitted.

Karnataka was a frontrunner in adopting the Model APMC Act, and an e-trading mechanism was established in the state to automate the agriculture markets, providing for services of grading and standardisation. Pavithra et al. (2018) studied APMCs in the Gulbarga district, Karnataka, and found that e-tendering brings greater transparency in price realisation by reducing transaction costs and overcoming the malpractices of the open auction and manual tender systems. Based on the success of the e-trading mechanism in Karnataka, the Cabinet Committee on Economic Affairs introduced the e-NAM scheme for the promotion of the national agriculture market through the Agritech Infrastructure Fund. e-NAM is expected to reduce information asymmetry between buyers and sellers, promote real-time price discovery, transparency in the auction process, access to a nationwide market to farmers, attain pricing that is commensurate with the quality of produce and introduce online payment system (Ministry of Agriculture and Farmers’ Welfare 2016). Whether e-NAM has fulfilled its purpose, has attracted mixed evidence.

In light of slow-paced reforms under the model APMC Act, 2003, the government developed the Model Agricultural Produce and Livestock Marketing (Promotion and Facilitation) Act in 2017, bringing
more freedom to the agriculture marketing system of the country. It removed entry and trade barriers attracting new players to set up markets and invest in marketing infrastructure, building an efficient supply chain transparent and competitive environment for marketing. In addition, the marketing of fruits and vegetables was deregulated from the network of APMC markets as post-harvest losses were very high in the existing system. States were encouraged to support farmers and private players to invest in the development of marketing infrastructure.

A small proportion of farmers participate in agri-futures trading in the country, addressing the issue of price risk through pre-determined prices in future contracts. (Chatterjee, Raghunathan and Gulati 2019) studied the benefit of futures trading for farmers and found that the small size of the farmer’s produce, lack of trust and awareness in working of futures markets, and apprehension from government authorities are the constraints faced in the functioning of futures markets. Futures trade has standards requirements of quality and quantity which can be fulfilled by large farmers and restricts the majority of small and marginal farmers in the country (Elumalai 2010). Promoting aggregators such as FPOs can help increase farmers’ participation in the futures trade by empowering them (Chatterjee, Raghunathan and Gulati 2019).

A number of issues in agricultural marketing remain unresolved. These are complex factors, and the idea is that none of the abovementioned aspects, namely, credit, insurance, storage and marketing can be understood in isolation from each other. An important part of the scholarship is drawing some of the ideas from engaging with the farmers, and understanding their felt needs, even as we alloy the impressions of the farmers across the four aspects. This has not been systematically explored in the literature. The present study aims to fill this gap.
Chapter 4: Methodology

This chapter details out the method adopted for this research. Since the study focuses on multidimensional understanding of felt-needs of the farmers, the method adopted was mixed.

4.1 Problem Statement and Research Objectives

The gaps that the proposed research tries to address include the following:
1. Lack of robust on-ground information on the problems faced by farmers in India.
2. Lack of empirical information or rigorously generated data on the needs, requirements, and preferences of farmers
3. Inadequate feedback on farmer groups with varying socio-economic contexts on various policy frameworks that the government may have rolled out.

The study objectives are the following:
1. To identify and understand the issues on the ground in the agriculture sector with a particular emphasis on a. credit & insurance and b. storage and marketing.
2. To deploy rigorous research tools in engaging farmers to understand the lifecycle of a farmer, identify pain points, their needs and their feedback on how the pain points can be addressed.
3. To ascertain feedback from the ground on what works, especially w.r.t various social groups and their diverging interests, and to gauge the information asymmetry vis-à-vis the existing schemes.
4. To identify specific issues requiring deeper investigation and offer policy recommendations for a way forward.

The deployment of the research tools to identify the issues on the ground with focus on factors like credit, insurance, storage and marketing, on what works with regards to different social groups and their interests, the understanding of the information asymmetry, have been analysed to understand the lifecycle of the farmer and identify the pain points and felt needs, and to ascertain on how they can be addressed. To understand the lifecycle of a farmer and to identify their pain points, the data collected is related to the credit system, insurance options, storage facilities and the marketing of the agriculture produce. How the social groups perceive the above four aspects from their point of view and their interests is availed through the data collection which also gives us an idea of the information asymmetry. All the data collected as mentioned above, is helpful in studying the objective related to the understanding of the felt needs of the farmers with regards to the existing schemes.

The study mandated capturing of the responses of social groups but not to separate the responses based on social groups because such a separation would lead to a situation where the rigor of the research could be compromised especially since the sample size is not very high. There would also be a requirement for a separate questionnaire for separation of the responses of various social groups and the methodology would be different with a separate treatment of variables which is decomposed against several social groups. It also makes the sampling process inaccurate and so separating the responses of various social groups was not considered as a good idea for this study. Larger sample size
for each social group would have made our sampling process inaccurate. Sampling was done keeping in mind that a collective, holistic response emerges from all social groups regardless of their individual samples. Small sample size can have outliers, therefore it is important to have a collective representative sample.

Theoretical and conceptual framework:
Over the last few decades, India has transformed from a country that relied on food to a country that exports food. However, the agrarian crisis that rears its head time and again, poses questions related to the issues of the farming community, and seeks its answers from the farmers themselves. In other words, given the complexity of dynamics in which agriculture sector in India is, coupled with the rapid changes taking place in various technological types in areas related to credit, insurance, storage, and marketing, it was felt that a first-hand account of the farmers, will aid in greater understanding of the issues on the ground, and sculpture informed judgment.

Therefore, this study attempts to understand the felt needs and pain points from farmers’ perspective, assess the existing policies and support from the government, and discuss with the major stakeholders in farming to evaluate the state of affairs in agriculture. This study intends to take a real-time stake in the challenges that the farmers face today related to credit, insurance, storage and marketing. This study focuses on the small and marginal farmers’ accessibility to credit and insurance, which are extremely important to uplift themselves from poverty by investing in income generating activities that ensure agricultural development. Insurance will provide a cushion to the farmers in case of natural disasters like floods, earthquakes, droughts, and effects of climate change or losses due to pandemics as witnessed in recent times. Marketing and storage of the agricultural produce by the farmers are the other aspect of agriculture that the study will focus upon. Small and marginal farmers face multiple of challenges in storing and selling their produce affecting their bargaining power in getting remunerative prices. Direct access to markets and adequate market infrastructure are major requirements to improve agriculture as an enterprise, help farmers gain profit and improve their living standards with ensured food and financial security, health, and education accessibility.

4.2 Methodology and Data Collection

The study proposed a basis for evidence-based decision-making to help realise the government’s vision of doubling farmers’ income inclusively and sustainably. The survey approach was to understand the felt needs of the farmers and problems they faced. Secondary to that, it was seen if and to what extent the existing schemes offer solutions to these problems. In the process, awareness of the schemes amongst the farmers were investigated. Subsequently, trends on uptake and scheme performance in varying socio-economic contexts were drawn up. A three-part process was followed for the research.

4.2.1 Secondary Research and Secondary Data collection

An extensive desk study and conducting secondary research to gather relevant information, which included a thorough review of existing literature and secondary data related to government schemes
and policies, focusing on specific indicators identified for the study, was carried out. The collated data was analysed along with existing research and policy documents, including scheme guidelines, to identify any gaps that needed to be addressed. Additionally, reports, documents, government policies, plans, and programs were collected and reviewed to ensure comprehensive topic coverage.

4.2.2 Sampling and Survey

The survey was conducted using structured interviews of 1583 respondents (farmers) from ten districts of five states. The states and districts were selected for the survey in consultation with NABARD.

4.2.2.1 Survey Design

- According to the gaps identified from the literature review, a survey design was formulated, including the tools like a questionnaire and sampling techniques,
- The questionnaire was examined by domain experts and through consultation with NABARD,
- A pilot was conducted to assess the questionnaire,
- Finally, the full-scale on-ground survey was launched in the ten districts across five states.

4.2.2.2 Sampling Methodology

Data extraction, sorting & filtering parameters for composite ranking

A purposive sampling technique was employed to select five states for this study to ensure representation from five geographical regions. Within these states, ten districts were selected based on two key variables - the expected amount of credit and overall yield. The idea of picking two districts with high and low endowments is not to pick an average, but to pick up the insights from places which have high and low endowments so that the responses are not biased to certain types of districts. So rather than focusing on averages, the focus has been primarily on reducing the bias by looking at a range while considering these districts. These variables were chosen as they provide a good indication of the economic status of a district with respect to their agricultural attributes, which in turn can help us understand farming-related activities such as access to different schemes, usage of inputs, and investment towards productive assets. With regards to the variables, there is merit in considering these two variables because they are neither confounding nor are they auto-correlated and they will give us appropriate averages that allow us to go deeper into the study. Regardless of the variables, an attempt has been made to 'qualitatively' evaluate if the districts chosen made sense or not. The purpose was to find the felt needs of farmers wherever they could find them and by looking at these two variables, there was an assurance of not being biased. With regards to averages, weighted averages were created only for the district selection.

The expected amount of credit was calculated by considering the amount available to all households in a district, weighted against the probability of each household as a beneficiary. This figure was then multiplied by the share of households that took credit to arrive at the expected amount of credit per household. On the other hand, overall yield was calculated as a weighted average of the individual
crops grown in each district. Data for these variables were extracted from Agriculture Census (2015) and National Data and Analytics Platform (NDAP), where "The Land Use Statistics" was referred to while generating the "Crop Production Statistics" for any district across the country. This data has already been weighted by Niti Ayog. The Pivot Table has been chosen with specific choice of state and district along with values of indicator 'crop yield' and 'weighted average land area of crop yield', to generate the weighted averages of crop yield.

A ranking was prepared to create a composite performance index of districts based on the expected amount of credit and overall yield. Districts with higher rankings were considered relatively better performing, while those with lower rankings were considered relatively worse performing. One district from each category (higher and lower performing) was chosen in each state to ensure an average representation of the findings in the state. The idea is to select one district from each category, i.e., one of the relatively high-performing and relatively low-performing districts, respectively, to average out the findings in the state. This also helped remove any bias in selection of the districts. The idea is that such selection offers a meaningful average against which general inferences can be drawn.

Table 4.1 States and districts chosen for primary data collection

<table>
<thead>
<tr>
<th>S.No.</th>
<th>State</th>
<th>Relatively better performing districts</th>
<th>Relatively worse performing districts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Andhra Pradesh</td>
<td>Krishna</td>
<td>Ananthapur</td>
</tr>
<tr>
<td>2</td>
<td>Assam</td>
<td>Dhemaji</td>
<td>Baksa</td>
</tr>
<tr>
<td>3</td>
<td>Maharashtra</td>
<td>Nagpur</td>
<td>Solapur</td>
</tr>
<tr>
<td>4</td>
<td>Rajasthan</td>
<td>Pali</td>
<td>Churu</td>
</tr>
<tr>
<td>5</td>
<td>Uttar Pradesh</td>
<td>Meerut</td>
<td>Kaushambi</td>
</tr>
</tbody>
</table>

Survey Methodology and Tools

After identifying the districts based on their performance ranking, a convenience sampling technique was employed to select the villages for the survey in each district. A detailed questionnaire was designed with four sub-sections: access to credit for small and marginal farmers, crop insurance, storage infrastructure, and marketing; to collect primary data from the farmers.

The questionnaire was carefully crafted to ensure that all relevant information was captured, enabling a thorough understanding of the farming-related activities in the villages. It included specific questions related to the availability of credit for small and marginal farmers, the effectiveness of crop insurance schemes, the adequacy of storage infrastructure, and the challenges faced in marketing farm produce.

As described, this questionnaire was also tested in a pilot, to ascertain that its quality.

4.2.2.3 Collection of Primary Data (interviews and FGDs with farmers)

Farmers are the main stakeholders in the study. The duration of the primary data collection extended from December 2022 to January 2023. The field research was conducted to collect primary data from
farmers across selected districts using a structured questionnaire annexed in the Report (Annexure I). The questionnaire comprised 93 questions, various questions aiming at finding farmers’ accessibility to government services, availing the various schemes, understanding the lifestyle of farmers, awareness regarding major schemes and their benefits, the motivation behind essential decisions, obstacles they faced, and their felt needs.

The survey followed the convenience sampling for identifying the sample for data collection at the village level and was conducted door-to-door. Local government officials from the Panchayat office, progressive farmers and DDMs were contacted to establish relationships in the villages. Farmers who were both beneficiaries and non-beneficiaries of government schemes from different size classes and income groups were chosen for the survey to cover all kinds of farmers engaged in farming activities. This was done to avoid any kind of bias against the farmers and ensures proper representation of the sample. The survey covered 50 villages in 10 districts (2 districts per state), with around 30 farmers surveyed in each village, resulting in a sample size of 1583 farmers.

Convenience sampling was considered because they often given the best results because random sampling requires huge amount of time and funding. In this case, convenience sampling was done in a quasi-random manner because local network was relied on to reach out to certain farmers, but by and large, most of the answers were triangulated well, and therefore it appears that the sampling results can be extrapolated. This sampling method was discussed before the project began, and the same ideas were also put forth and explained. In any study, extrapolation is an extremely difficult exercise and most extrapolations are faulty. This is because, no matter what the sampling techniques are, extrapolations are normally tricky and so, like in most studies, it has been suggested that these results should not be extrapolated across the country. However, if the study is true for around 15-30 farmers in each district, it is very likely that it is true for most farmers. The sample size is also large enough to ensure that they are not singled cases where these findings are coincidental. With the sample size of 1583, there is a perception that the responses cannot be coincidental but indicate some general perception of the farmers.

In addition to primary data collection through the questionnaire, Focus Group Discussions (FGDs) were conducted to gain deeper insights into the underlying causes of farmers’ distress. The FGDs provided valuable feedback on farming practices, challenges faced, assistance required from the government, and suggestions for improving income. These observations and findings helped identify ideas and issues that were initially overlooked but were nevertheless significant for the study.

FGDs were conducted in all ten study districts, with a homogenous group of 6 to 8 farmers based on their land size. The discussions followed a semi-structured questionnaire to understand better farmers met and unmet needs, their opinion of the existing facilities for farming activities in their region, cultivation practices, challenges faced during the sale and storage of produce, and awareness and information regarding schemes.
4.2.2.4 Engagement with other stakeholders

In addition to the survey with farmers, multiple stakeholders were identified for the study to ascertain a holistic understanding of the farmers’ major issues on the ground, the status of schemes and policies, and an institutional perspective from stakeholders.

Following are the stakeholder interviewed for each of the topics:

a. Access to Credit and Crop Insurance: Lead District Manager (LDM)
b. Storage: State Warehousing Corporation
c. Marketing: Agriculture Marketing Board (State), and APMC members and Marketing Officer (districts)

The research team conducted interviews with various stakeholders to gain insights into farmers’ issues from institutional decision-makers at both district and state levels. These stakeholders were identified to provide an institutional perspective on farmers’ problems, their opinions on existing schemes and policies, and suggestions for the way forward.

To achieve this, semi-structured questionnaires were prepared for stakeholders, including the Agriculture Marketing Board, State Warehousing Corporation, and Lead District Manager. The questionnaires for interviews with the officials from Marketing and Storage departments have been given in Annexures II A & B. The questionnaire for the interviews with the LDMs has been annexed in Annexure III, and the questionnaire used for conducting the FGDs has been annexed in Annexure IV. The team met with officials like the Managing Director, Secretary and Managers of the respective State Warehousing Corporation and Agriculture Marketing Board of all five states.

Assam and Andhra Pradesh’s State Warehousing Corporation and Agriculture Marketing Board officials were interviewed online. The interview with State Warehousing Corporation and Agriculture Marketing Board from Uttar Pradesh, Maharashtra and Rajasthan were conducted by visiting their respective offices and to interview LDM and APMC members; the research team visited all the districts.

4.3 Primary Data Analysis

The study adopted the mixed method research methodology combining both quantitative and qualitative data for analysis of primary survey and stakeholder interviews. The collected primary data from questionnaires was tabulated and organized to analyze the data and inferences were drawn from the evaluation study leading to recommendations and suggestions. The opinions, knowledge and idea of stakeholders and respondents were comprehensively shared and understood by all team members through a continuous effort to translate these opinion and ideas into clear findings and inferences.

Standard deviation is very low in the sample size of each of these districts, therefore the sample size is considered as an average for each of these districts. This allows ease of comprehension. Multiple choice questions were posed to the respondent farmers in a few cases which resulted in the overall
percentage of options going beyond 100%, which is natural because every respondent can opt for more than one answer. For instance, several farmers opted for more than one answer while expressing their concerns in approaching a bank for credit, citing distance and lack of documents at the same time. This results in an average of more than 100% because of the multiple options that were provided to the respondents on the questionnaire. Significance tests were not submitted because the regressions on the data did not yield anything substantial or something which was not evident from the data otherwise.

4.3.1 Quantitative Analysis of the primary data

The primary data were analyzed to assess the variables against each other, and compared in other districts and states, to identify trends and patterns on major themes of the study from farmers’ response. The data analysis was conducted theme-wise to understand awareness regarding government scheme, lifecycle of farmers, major problems faced by farmers, performance of selected schemes and important information about their preferences and perception regarding farming.

The comparative analysis is depicted largely through graphs and tables and was conducted to generate required information according to the objectives of the study. Apart from surveys with farmers, information from FGDs was also analyzed for triangulation, as well as to evolve more authenticity and appropriate feedback.

4.3.2 Qualitative Analysis of stakeholder interviews

The insights and observations from the interviews were examined to understand institutional stakeholders responsible for formulating rules and regulations and implementing policies and their views on functioning and performance of these institutions. Insights regarding the major challenges faced by farmers and their suggestion for improvement about existing policies and farmers’ lives were also analyzed.
Chapter 5: Findings and Inferences

This section outlines the findings and inferences based on the information from the primary data. The analysis was done based on various parameters with due consideration to the study's objective. This section should be read alongside the descriptive analysis that we have done with extensive variables using graphs and tables, in Annexure V, as well as the interview summaries from government stakeholders like the LDMs, State Warehousing Corporation and Marketing Board officers.

We divide the analysis under the following areas of inquiry, and in each of these categories, we examine the four focus aspects in the study (credit, insurance, storage, and marketing):

a) Awareness
b) Agricultural practice
c) Suitability of schemes for farmers
d) Challenges faced
e) Perceived needs and solutions

Later in this section, we undertake a district-wise treatment on the most important issue of the mode of sale, since it has material implications in farmers’ welfare.

5.1 Awareness about major schemes, their features and benefits among the farmers

The government has launched various schemes and policies to support and assist farmers in agriculture. However, the lack of awareness and possible information asymmetry among farmers can hinder the effectiveness of these schemes and policies. This study evaluates the extent of information asymmetry among farmers regarding major schemes and policy initiatives in the agriculture sector. First, we describe the awareness about major schemes and policy initiatives as assessed through our survey.

Credit
- The survey reveals that awareness among respondents about flagship schemes under credit, i.e., KCC was 58%.
- The highest awareness about the credit scheme was observed in Andhra Pradesh (86%) and the lowest in Maharashtra (27%).

Insurance
- The survey reveals that awareness among respondents about flagship schemes (particularly PMFBY) under crop insurance, was around 50%. The awareness could be a factor that results in the success rate of crop insurance received by the farmers in Andhra Pradesh.
- Most of the farmers surveyed indicated they were familiar with the PMFBY as the primary crop insurance scheme, although some respondents also mentioned other schemes such as the WBCIS and YSR Free Crop Insurance. Most farmers were aware of Pradhan Mantri Fasal Bima Yojana (PMFBY) while very few were aware of Weather Based Crop Insurance Scheme (WBCIS) and YSR Free Crop Insurance.
• The awareness level about crop insurance schemes was highest in Andhra Pradesh and Rajasthan, with 83% and 66% of the sample farmers.

• Within Maharashtra, it is surprising to note that Solapur has very low awareness of crop insurance while Nagpur has ten times more awareness, which shows that the issue is district-specific and not state-specific.

• Andhra Pradesh offered an instructive example as regards awareness of insurance scheme in the state. It was observed that the agriculture officer was present in every village and took monthly meetings for awareness and to explain the procedure to the farmers. Rythu Bharosa Kendra at the village level had volunteers spreading information from village to village and also helping them in the application, renewal and claim settlement process. An e-crop portal/application was functioning in the state, which has all information about cropping patterns, farmers, etc. information about crop insurance and claims were also uploaded on the portal, which helps the authority assess the expenditure incurred for cultivation and claim amount. The state government directly transferred the claim amount to the farmers without middlemen, which was possible due to the e-crop portal in the state.

Storage

• Around 30% of the respondents were aware of the storage schemes (AMI and ISAM), while a mere 4% knew about the Negotiable Warehousing Receipts (e-NWR). However, there were some exceptions, such as Meerut, where 17% of the sample farmers were aware of e-NWR, and around 15% were also availing of its benefits.

• Despite having high awareness in Andhra Pradesh, there a reluctance to store their produce. In Assam, awareness of storage schemes is relatively high and it clearly reflects on the actual storage of produce which is the highest among all the states. The overall awareness of e-NWR (electronic Negotiable Warehouse Receipt) was also considerably low.

Marketing

• The survey findings indicate a significant need for more awareness among farmers regarding schemes in the Storage and Marketing sector, such as the Agriculture Marketing Infrastructure (AMI) Scheme, Integrated Scheme for Agriculture Marketing (ISAM) and eNAM.

• The awareness about marketing schemes was also relatively low, with only 17% of respondents being aware of the ISAM scheme and a mere 5% of respondents knowing about the eNAM scheme. In Andhra Pradesh, however, the sample farmers knew the storage and marketing schemes, i.e., AMI Scheme and ISAM. In Assam, around 13% of respondents reported being aware of eNAM, while in all other states surveyed, the awareness was very poor, with less than 10% of respondents knowing about the scheme.

• The study reveals that, apart from Andhra Pradesh, where awareness is better than other districts, Dhemaji is the only district with very limited awareness. Dhemaji is surprising since it is closely connected with Dibrugarh and therefore ought to have awareness regarding marketing.
Discussion

- Among the states, Andhra Pradesh, despite its low levels of education and use of technology, does very well in terms of awareness of most of the schemes. This may be a result of the Rythu Bharosa scheme by the state government.
- Proximity to cities or regions: Meerut, Pali and Dhemaji are closer to bigger cities like Delhi, Jodhpur and to Arunachal Pradesh respectively, which could be the reason of higher awareness related to credit schemes. Dhemaji is known to be the gateway to Arunachal Pradesh.
- The low level of awareness about the KCC scheme among farmers is a cause for concern, as it has been in operation for over two decades and remains the primary source of institutional credit for crop loans, suggesting that there is still room for institutional credit in terms of reaching farmers.
- The Crop Insurance scheme, PMFBY is relatively new and not very popular among farmers. Our field interactions with Lead District Managers (LDMs) in all districts revealed that the awareness about the crop insurance scheme is not up to the mark. Thus, increasing awareness about the scheme at the grassroots level is crucial. Farmers must be educated about its benefits, and any doubts or confusion regarding the scheme must be addressed.
- Officials have acknowledged the low degree of awareness about the e-NWR scheme among farmers but have also noted that this is gradually changing due to awareness camps being held. Except for Assam, all four states were issuing e-NWRs against the storage of produce. The Assam State Warehousing Corporation is working towards joining the Warehousing Development and Regulatory Authority (WDRA) and launching e-NWRs. Thus, creating awareness and encouraging farmers to avail these initiatives, such as e-NWR and e-NAM, can lead to a more efficient and modernized marketing system.
- A lack of confidence develops among farmers due to information asymmetry regarding these programmes. For these programmes to be implemented more effectively, closing this gap through awareness efforts, farmer education initiatives, and technology dissemination is essential.
- The survey has revealed that the awareness about Farmers’ Producer Organizations (FPOs) was not very high (27%) among sample farmers in all survey districts, except for Solapur, Pali, and Kaushambi, where the awareness was no more than 8%. However, the awareness about FPOs was comparatively high in Assam (49%) and Andhra Pradesh (43%).
- It was found that the farmers who were aware of FPOs did not know the benefits of joining such organizations, though some respondents in Assam and Maharashtra reported that being a part of FPO ensured security in buying seeds and fertilizers, selling produce, and access to credit.
- Awareness about contract farming was found to be 37% among sample farmers. The highest level of awareness was observed in Andhra Pradesh, with 99% of the sample farmers and the lowest in Rajasthan only 3% of the sample farmers. Contract farming is seen as an effective means of generating supplies for processing industries and exporters, with a substantial potential of adding value to agriculture (DEAR, NABARD 2005).
- All the farmers aware in Andhra Pradesh were also engaged in contract farming.

5.2 Agricultural Practices

In this sub-section, we focus on the livelihood and agricultural practices among the sampled farmers to gain insight into the level of scheme uptake and their usefulness. By exploring these issues, we aim
to identify gaps in the current schemes and gain an understanding of farmers’ requirements. The four key issues identified for this study represent crucial stages in farming, providing a comprehensive picture of the farmers’ lives.

Credit
- Only 28% of the total sample availed agricultural credit in the previous year. Andhra Pradesh and Rajasthan showed relatively higher uptake of credit, with 55% and 47%, respectively, compared to the other three states. Despite having moderate to high levels of awareness of credit schemes in Andhra Pradesh, there is a reluctance to avail KCC schemes. In Maharashtra, unlike Solapur, Nagpur fares poorly in the KCC uptake by farmers, which may be a result of the presence of cooperative societies. In Assam, Maharashtra and Uttar Pradesh, 96%, 87% and 77% of sample farmers did not avail of credit.
- It appears that collective organizations such as FPOs, JLGs or SHGs can improve access to credit among vulnerable farmers and facilitate accessibility to schemes. The survey revealed that 39% of the respondents agreed that it would have been easier to obtain agri-credit if they had been part of a farmer’s organization. However, only 3% of the sample farmers belonged to a farmer organization which could be due to low awareness about FPOs. Exploring a deeper investigation into the reasons preventing farmers from forming FPOs even after being aware of their benefits would be invaluable.
- The average amount of credit farmers availed in Maharashtra was the highest among all states, with an average loan amount of Rs 2.46 lakhs. In comparison, the average loan amount in Assam, the state with the lowest credit uptake, was only Rs. 34,043. This disparity in loan amounts could explain the low uptake of credit for agriculture among farmers in Assam.

Insurance
- The survey results indicate that the crop insurance scheme was availed by approximately 26% of the sample farmers.
- Among the five states surveyed, Andhra Pradesh had the highest percentage of sample farmers (54%) who availed of crop insurance, followed by Rajasthan with 52%. On the other hand, only 2% of sample farmers in Uttar Pradesh availed of the crop insurance scheme, representing the lowest uptake among the surveyed states. These findings suggest a need to increase awareness about crop insurance schemes, particularly in states with low uptake.
- Type of land, technical hindrances, lack of documents and lack of prior knowledge were some of the issues that caused difficulties in applying for the insurance schemes.
- Even though the farmers of Andhra Pradesh have received crop insurance, there is a lack of trust on the agencies involved in disbursement of the insurance amount possibly because they believe it is not favourable for farmers, specifically because they are tenant farmers. The lack of trust is also noticed in Rajasthan and the above two issues can be related to the fact that there is belief among the farmers that there is corruption involved in the system for insurance disbursement.
- Case of Rajasthan with respect to insurance has been quite instructive. The state has extreme weather conditions such as high rainfall, droughts etc due to which, a large number of farmers were availing PMFBY in Rajasthan. Insurance companies organize mobile awareness campaigns with public announcements and pamphlets from village to village every second month. Therefore,
we noticed a high level of awareness of crop insurance in Rajasthan. In case of crop destruction due to natural calamity, farmers mobilize amongst themselves to inform the local government authorities. The concerned private company was then directed to investigate the crop loss and release the claim accordingly. Due to high level of awareness, mobilisation and active involvement of both farmers and state government ensured proper functioning of the scheme and rightful claim settlement.

Storage

- The survey revealed that 36% of the total respondents engage in storing their produce. Notably, Assam had the highest proportion of respondents (83%) who reported storing their produce, followed by Rajasthan and Uttar Pradesh, with 47% and 22% of sample farmers. In Maharashtra, as unlike in Nagpur, storage is very low in Solapur, presumably because of the coordination efforts of Krishi Vigyan Kendra in Solapur that helps the farmers coordinate and get better prices in the local private market rather than opt for storage and sale later.
- Of those sample farmers who store their produce, only 12% reported being charged for using these facilities. In contrast, 60% of the sample farmers said they were not charged, while the remaining respondents were unaware of any charges.
- Surveyed farmers reported the charges of these storage facilities as approximately Rs. 5,819 on average for use of these facilities, with the maximum charge reported in Solapur at Rs. 18,500 and the minimum charge in Dhemaji at Rs. 237. The sample farmers cultivated vegetables and kept their harvest in cold storage facilities, which could be the cause of the higher storage charges noted in Solapur.
- In Rajasthan, very high transportation costs and low awareness of storage schemes adds to the economic problems of farmers.

Marketing

- The survey found that about 20% of the sample was engaged in some secondary processing or value addition, such as cleaning, grading, and labelling of the harvest.
- The data also reveal that value addition for paddy is the most common type of secondary processing among the sample farmers, with 51% of the whole sample being engaged in it, followed by wheat at 37%. Processing for wheat is primarily taking place in Maharashtra and Uttar Pradesh. Around 11% of the sample, farmers were also involved in processing for vegetables.
- Most sample farmers were selling their produce in local markets (65%) or middlemen (12%), while only 25% of the sample farmers were selling to the APMC mandi.
- Some sample farmers considered contract farming a viable option; 72% of farmers in Assam, 96% in Anantapur, and 49% in Kaushambi practise it. Only two districts, Krishna and Nagpur, have a majority of farmers (90% and 92%, respectively) selling their produce in APMC mandis.
- Based on the inputs received from the farmers, the highest APMC mandis charge per quintal was in Andhra Pradesh (Rs. 1525) while the lowest was in Assam (Rs. 45).
- Due to the challenges in selling their produce in APMC mandis, farmers choose to sell it elsewhere besides the designated mandi. The results indicate that 17% of the sample farmers sold their produce elsewhere. Notably, the highest percentage of farmers that used other avenues to sell their produce was from Assam, with about 25% of the sample farmers.
• The present study sought to examine farmers’ various information sources to learn about crop prices. The findings show that a sizable percentage of farmers (40%) relied on traders or middlemen for crop price information. 33% of the sample farmers got their price information from local mandis. Interestingly, 25% of the sample’s farmers accepted that they got price information from their neighbours or the local community.

• The role of intermediaries in the agriculture value chain is a major challenge for farmers. The survey’s findings showed that 46% of sample farmers believed that middlemen, or arhatiyas, strongly influence their choices and the prices of produce. The influence of intermediaries also extends to the market choices of farmers, such as the type of products and pesticides used.

• In Andhra Pradesh, the preference is to sell their produce through APMC mandis or through contractors. APMC mandis are preferred for sale of produce in Krishna and Nagpur despite high charges, because MSP is received by most of the farmers, while farmers in Anantapur prefer contractors because of high charges at the APMC mandis and lesser number of farmers receiving MSP. Better price in local markets of Solapur is also a reason to avoid APMC.

• Most of the farmers in Krishna in Andhra Pradesh and Nagpur in Maharashtra receive MSP, unlike other districts that were studied. This results in sale of produce through APMC in Nagpur and Krishna, while direct sale in local markets or sale through contracts are preferred in several other districts.

• Not many farmers get MSP in Anantapur and along with high charges of APMC in Anantapur, the farmers do not prefer APMC. While in Krishna, APMC charges are high but since MSP is also given to farmers, it results in maximum sale of produce through APMC in Krishna. Contrasting figures are seen in the same state because of the MSP provided to farmers - in Nagpur, a greater number of farmers receive MSP while the farmers in Solapur do not receive MSP.

Discussion

• An e-NWR scheme is a multifaceted tool that encourages farmers to store their produce and earn profits during off-seasons while promoting institutional credit. In addition to the KCC scheme, e-NWR offers similar advantages in providing credit to farmers, as highlighted by officials from State Warehousing Companies in the surveyed states.

• The government also encourages farmers to store their produce by relieving charges. A rebate for around 60%-70% of the storage facility charges is available for the farmers from the state warehousing corporations.

• Despite the government’s efforts to incentivize storage by providing relief in charges through state warehousing corporations, small and marginal farmers are not making the most of e-NWR such as,
  o Firstly, most farmers are unaware of the advantages of this facility,
  o Secondly, they lack the resources to go through the process to generate profits, and
  o Thirdly, many require immediate access to funds and frequently sell their produce to nearby dealers or middlemen.

• As a result, only more prominent traders and farmers with marketable surpluses can utilize the benefits of storing their produce and e-NWR to wait for months and earn profits.
5.3 Suitability of existing schemes according to farmers’ requirement

One of the motivations behind this study is to analyse the scheme’s implementation and the extent to which they are helping the farmers. To understand the suitability, farmers were asked whether the existing scheme, storage infrastructure and other government facilities meet their needs.

Credit
- Except for Andhra Pradesh, the KCC scheme emerged as the most popular source of credit, with over 61% of all respondents from the sample reporting having used the programme. In Andhra Pradesh, none of the respondents received credit under the KCC system (more than 2/3rd took loans from other bank loans, and around 43% from cooperative societies and moneylenders each.) Also, 22% of total farmers surveyed availed of credit from Cooperative Societies.
- The reasons for opting for sources of loan other than KCC were a hassle-free procedure for that loan as opposed to technical and legal hindrances for the KCC loans, as reported by around 20% of sample farmers. Around 17% of respondents said they received a higher loan amount than KCC. Interestingly, Andhra Pradesh had 42% of farmers who availed credit through money lenders, unlike the rest of the states, where the corresponding uptake was nil.
- The adequacy of agri-credit received for the expenses incurred in farming for the farmers is an indicator of the scheme’s performance. From the survey, about 61% of respondents found the loan amount sufficient to meet their crops’ expenses. Farmers in Uttar Pradesh and Assam were comparatively more satisfied with the loan amount than the other three states. Only 37% of sample farmers in Rajasthan were satisfied with the loan amount, demonstrating the necessity of revaluating the amount of loans provided to farms so that they are not forced to look for credit from non-institutional sources.

Insurance
- PMFBY aims to provide compensation to farmers in case of crop loss. One way to assess the scheme’s performance is to analyse the success of insurance claim settlements under the scheme.
- Only about 10% of the respondents availing the scheme made an insurance claim for crop loss. Important to note that 90% respondents had claimed crop damage under the insurance scheme. Among those who made this claim, 79% acknowledged having received their claim.
- About 40% of respondents who made a claim reported receiving the complete settlement claim, while around 60% received only a partial settlement of their insurance claim.
- Apart from crop insurance, sample farmers relied on alternative measures. 47% of the total sample took assistance from friends and family, 21% relied on government relief, and 29% took other bank loans in case of crop loss.
- Interestingly, approximately 58% of the sample farmers reported crop loss, but only 26% availed of crop insurance. This shows broad scope for insurance to reach the farmers.

Storage
- Farmers’ ability to store their produce depends on several factors, including the accessibility and availability of existing storage infrastructure, knowledge of in-demand crops and their prices, and,
most importantly, the ability to hold off on selling their produce for a few months in order to benefit from rising market prices.

- 36% of the surveyed farmers said they stored their produce, but from this cohort, only 7% of the farmers used the government storage facilities, 27% of the farmers stored in private storage, but the lion’s share, 66% of the sample farmers stored their produce in their storage units which were their own houses or make-shift temporary sheds near their fields. Farmers storing their produce in their own houses affected the quality of the produce. On the other hand, private storage units likely to charge higher rates and do not provide enough protective measures like crop insurance as they may not follow all the government norms and guidelines.

- Assam shows very less support from the government, and the distance of the mandis forces farmers to opt for storage. However, the farmers of Assam have made arrangements privately for the storage of their produce, which is unlike other states because storage is lesser in other states as compared to Assam. Assam stands out as a glaring example because, even though the farmers have awareness of the storage schemes, they still indulge in emergency sale for urgent need of money

Marketing

- Most of the sample farmers in all districts did not know whether their APMC Mandi was registered with e-NAM, and only a tiny proportion (between 1 and 11%) said that it was not registered.
- Out of the 5% of survey farmers who were aware of e-NAM, a large majority of farmers in Anantapur and Solapur and a small minority of farmers in Dhemaji signed up on the website. None of the sample farmers has signed up on the site or any other e-auction platform in any other district.

Discussion

- The fact that nearly 40% of the respondents expressed dissatisfaction with the loan amounts they received highlights the inadequacies in the credit system for farmers. Farmers relied on credit to purchase high-quality inputs, maintain their farming equipment, and make post-harvest investments in storage and processing for their produce. The lack of timely and sufficient credit may cause several inefficiencies in the production process. Access to adequate credit is essential for increasing agricultural productivity, investing in farming activities, achieving self-sustainability, and improving farmers’ income.
- The other 40% of the respondents did not use KCC schemes. These sample farmers chose other loan sources due to hassle-free procedure, higher loan amounts and lack of technical and legal requirements.
- The eligibility criteria, application procedure and required documents should be flexible to encourage farmers to choose institutional credit.
- The LDMs interviewed suggested it was crucial to identify the extent of the need for credit among farmers as per the requirement, as it would help design the scheme and the support provided to the beneficiary. For example, small and marginal farmers currently prefer short-term loans for farming, while large farmers would also require long-term loans according to their credit needs and repayment capacity.
Government storage units are rare among farmers. The flux of private storage facilities and their usage can be understood through multiple schemes and policies supporting entrepreneurs in building warehouses. Due to higher charges, inaccessibility of storage facilities, and low quantity of produce, most farmers end up using their own storage facilities.

5.4 Challenges faced by farmers

This part of the study aimed to determine the ease or difficulty of the application procedure for availing agriculture schemes—our research attempts to assess the access, uptake, or availability of these schemes among farmers. Maintaining an easy and flexible application process should be one of the primary objectives of the government in order to ensure that the beneficiary does not face issues in availing of the benefits of the schemes.

Credit

- Many farmers across the districts expressed dissatisfaction with the loan amounts they received while several farmers were not comfortable with the procedure of application for the schemes. 54% of respondents felt that the application procedure was very complex, 45% said they did not have the required documentation for the application, and 20% claimed distance to banks is a major concern. Some minor concerns were lack of sufficient land, technical hindrances and not falling in the eligibility criteria.
- Some of the concerns raised by the respondents in approaching the bank for credit were that
- The farmers who did not avail credit gave reasons such as lack of awareness and complex scheme procedures. 44% of the sample farmers said they did not have enough awareness regarding the credit schemes, followed by reasons such as not falling under the eligibility criteria (20%), legal and technical hindrances and lack of sufficient land or security (20%).

Insurance

- The availing of the scheme was low among farmers even when they were required to pay a small share of the premium, and a majority of them were facing crop destruction due to different reasons.
- Only 26% of the surveyed farmers availed of crop insurance. They cited a need for prior knowledge and technical hindrances as the most frequent challenges in the application process of PMFBY. 22% cited a lack of proper documents as an issue, while 17% also claimed they faced problems due to their type of land.
- The two primary reasons given by respondents (1,171 farmers) who were not availing PMFBY plan were a lack of funds (31%) and a complicated process (12%). Additionally, around 30% of respondents believed that these insurance policies were not in their favour and that they would not benefit from the scheme.

Storage

- The respondents gave several reasons for not storing their produce. Distress sales for immediate money requirements emerged as the prominent reason for 37% of sample farmers. Other reasons
cited for not storing produce included unaffordability to use storage facilities (24%), high charges for storage (12%), and lack of storage facilities near their premises (11%).

- Notably, the majority of the sample farmers (49%) fell into the small and marginal category, and the absence of selling infrastructure and storage facilities can be a significant barrier for them due to lack of funds and access to storage facilities.
- The emergency sale for urgent need of money is perhaps contributing to low uptake in Rajasthan and Maharashtra of storage schemes, resulting in low prices of the agriculture produce. Distress sale of produce for immediate requirement of money was the prime reason, followed by affordability of storage facilities, that farmers do not use storage facilities.

**Marketing**
- The sample farmers face several issues in selling their produce in mandis. More than half of respondent farmers said that the mandis were very far, and over 40% of sample farmers said that transport facility charges were very high and that they had no access to transport facilities.
- 76% of the farmers asserted that they did not get MSP while selling at the APMC mandis. The findings show a remarkable state-by-state variation across states, with only 3% of the sample farmers in Rajasthan having reported getting MSP while selling their product, compared to 55% of the sample farmers in Andhra Pradesh.
- 43% of the farmers in the sample said they were forced to sell their produce for less than the costs associated with growing the crops.
- 40% of the sample farmers said they sold their produce at a lower price for the emergency need of money. 32% reported a low quantity of produce as the reason (farmers who produce a small amount of goods often prefer to avoid the challenges associated with transporting their produce to markets such as mandis. Instead, they usually sell their goods to local traders or middlemen and accept the prices offered to them) The other significant reasons were costly mandi fees and substandard-quality produce.
- Problems such as the more extended waiting period for the sale of produce, high commission charges, low profits, delayed payment and lack of storage were the reasons which compelled farmers to refrain from selling their produce in APMC mandis.
  - 40% of the farmers in the sample said the lengthy waiting time forced them to sell their produce elsewhere or risk spoiling it.
  - 35% said they got the correct prices in mandis, while 29% reported delayed payments.
- Information asymmetry among farmers about online trading platforms was rampant. 51% of the sample farmers said that they had no knowledge of the online transaction process (e-trading), and the other half reported the cumbersome process and lack of trust in digital technology as some of the obstacles. Despite these difficulties, it is noteworthy that 30% of the respondents in our survey indicated that they would be open to selling their produce on online markets like e-NAM.

**Discussion**
- Some of the suggestions from the interview with LDM were that agriculture departments and gram panchayat should collaborate with banks to increase awareness about credit schemes. The resources allocated within the respective departments responsible for spreading awareness were
low. One of the officials recommended that TV advertisements should be used to spread awareness as it was easy to do without hiring more people.

- The crop insurance was not popular among the sample farmers as they did not find it beneficial. Multiple reasons alluded to during field interviews with stakeholders and farmers, such as:
  - Low claim/settlement ratio,
  - Delay in getting compensation/timely financial assistance,
  - Non-investigation of losses on account of the localized calamities by the insurance companies,
  - Inaccurate assessment of crop losses,
  - The disparity in compensation received by farmers who have been affected by the same incidents,
  - Delay in receipt of compensation

- According to representatives of the State Warehousing Corporation, there is a significant knowledge gap among farmers on the advantages of keeping their produce in storage and using e-NWR receipts. They emphasized the necessity of constructing more storage facilities close to farms so that farmers would not have to worry about their location or lack of supply.

- The sample farmers were enquired about the major issues in farming: high input prices, including purchasing expensive seeds, building an irrigation system, and using fertilizers (54%). Low prices for their crops were brought up by 26% of the farmers, low access to credit (13%), and the existence of middlemen (7%) were also identified.

5.5 Perceived needs and solutions

In this section, we present the suggestions made by the respondents to strengthen agricultural techniques, input quality, policy design, access to marketing, and storage facilities to increase their farm income. It is crucial to look for the farmers’ perceived needs after examining the problems and difficulties they encountered within the framework of the current programme.

Improving access to credit

- The government has prioritized improving institutional access to financing for farmers through several laws and programmes. There is still much work to be done to expand prompt and flexible access to institutional credit.
- Respondents perceived a need for loans at a lower interest rate. They also wanted simple schemes and procedures and a higher loan amount.
- A common suggestion from interviews with LDM was that the credit scheme application procedure must be uncomplicated. Small farmers, especially, cannot go through the process of arranging documents and visits to banks to take credit to receive small loans such as Rs. 15,000-20,000.
- Due to the majority of farmers with a smaller size of agricultural land, the amount of loan sanctioned was much less, which was not commensurate with the credit requirements for farming. Complex application procedure further dissuades these farmers from approaching the banks. It was discovered during the field visits that the loan sum granted needed to be increased
to cover the costs associated with a harvesting season. These warrants revise the ceiling for the loan sum granted to the farmers.

Insurance
- 68% of the sample farmers who were not availing of any crop insurance scheme expressed their willingness to apply for crop insurance in the future, suggesting the interest in crop insurance among farmers.
- Approximately 78% of the farmers in the sample enrolled in a prevailing insurance scheme indicated that they intended to continue, suggesting that despite any criticisms or concerns about the program and its procedures, the farmers who receive crop insurance still saw value in its benefits.
- Some LDMs suggested that to increase awareness about crop insurance schemes, banks should organize weekly meetings to spread awareness and display the details about crop insurance among farmers.
- Geo-tagging of crops with the land of the farmers and e-crop would help to improve the estimation of the claim amount according to information on the portal.
- The state governments of Andhra Pradesh and Rajasthan have played a crucial role in promoting and facilitating the scheme for the benefit of farmers in both states. They ensured that private companies abode regulations and worked towards the welfare of farmers. Moreover, there is a high awareness among farmers, thanks to the extensive campaigns organized at the village level. The local government officials ensured that crop loss assessment was accurately done, further bolstering the farmers’ confidence in the scheme. These concerted efforts resulted in farmers availing the appropriate benefits of crop insurance, thereby increasing their trust and usage of the scheme.

Support required with respect to storage and marketing
- Around 70% of produce was sold in the local/wholesale market or through middlemen. This can be understood as a frequent practice for farmers to pledge to sell their produce to intermediaries or traders in exchange for financing their farming costs. Selling to middlemen in local markets is also simpler because transporting produce to mandis is difficult.
- 46% of the sample farmers opined that middlemen/arhatiyas had a powerful influence in deciding the produce prices, affecting choices and interpersonal relationships with farmers.
- Some farmers also chose other markets than the local markets to sell their produce due to reasons such as low prices in local markets (69%), lack of value addition (31%), high commission rates (27%) and inadequate storage facility (22%).
- 50% of the sample farmers believed they could get higher prices for their produce if they could keep it in storage for a few months until the market improved.
- According to the officials from Marketing Boards, only large farmers and traders could benefit from marketing schemes.
- According to all this information, farmers in the current marketing system were dealing with several problems, such as:
  - There were no economies of scale,
Their revenue was poor, and—most importantly—they were losing out on a share of the crop prices,
- Lack of awareness about online trading platforms and advanced technology
- Lack of knowledge or capacity

- These problems necessitate an overhaul of the marketing system that guarantees adequate storage and marketing infrastructure, training on value addition, reduction in the influence of intermediaries, and fair prices for the farmer producer to sustain the agricultural sector.
- Following are some of the other suggestions from stakeholder interviews-
  - A marketing official suggested that awareness about e-NAM and its benefits would fetch a better price and encourage farmers to produce a better quality product.
  - To promote the usage of e-NWR, the storage units and the e-repository should be linked to the banks to make it more accessible for farmers to avail credit against the stored produce.
  - Small and marginal farmers were gradually learning the benefits of storing their produce and selling it at a profit rather than a loss. In order to encourage this trend, storage infrastructure should be developed at the farm-gate level with affordable storage charges so that it is accessible for farmers.

Enhancing income through farming
- One of the most critical aspects of our research involved asking the farmers’ opinions on the best ways to boost their income. Farmers had a range of opinions:
  - More than half of the respondents (56%) agree that sowing cash crops such as vegetables, pulses, and oilseeds would increase their income.
  - 60% of farmers claimed they could enhance their revenue by boosting crop productivity, indicating that this was a common preference among farmers.
  - According to 22% of the survey participants, switching crops could be advantageous.
  - 9% of those surveyed expressed their desire to start working with animals or poultry.
- About 71% of the sample farmers claimed they could sell better and get better prices when selling to local traders or middlemen, and 19% think getting government-mandated MSP is the best choice. About 28% of the sample farmers claimed that trading their produce online would help them sell better.
- There are many reasons why farmers choose to sell their produce to them, ranging from flexible processes, no need for transportation, and quick payments, as witnessed during field trips and through surveys.
- According to the survey, around 43% of all farmers in the sample indicated they are willing to take long-term loans from institutions like the KCC scheme, the Agri Infrastructure Fund, or the Agricultural Marketing Infrastructure (AMI) for investors to raise their income and crop productivity.
- More than 50% of respondents wanted to invest in the irrigation system, and 25% wanted to procure better-quality seeds and fertilizers.
- According to the respondents, they require assistance from the government in terms of the following:
  - Improving access to financing through flexible procedures and reduced interest rates,
The surveys also revealed that important stakeholders in this context are the local trader/middlemen (licensed and unlicensed large farmers, traders or middlemen who are significant village and block-level actors). They are affluent people who provide credit to farmers, buyers of farmers’ produce at the village level from the farm itself and later sell in mandis, mills and processors. Deeper understanding and further investigation must engage with them as well.

**Difficulties faced in accessing institutional credit**

- Many tenant farmers do not possess required land documents, rendering them ineligible for schemes such as KCC scheme.
- Acquiring land documents is a significant challenge faced by farmers. Obtaining documents such as land titles, lease agreements, and ownership records can be a complex and time-consuming process, requiring substantial resources and legal expertise. This issue is compounded by the absence of a unified and reliable land registry system, making it challenging for farmers to procure the necessary documentation.
- Farmers also face challenges in filling out the application forms required for accessing credit. This lack of knowledge may lead to farmers being unable to provide the necessary information or documents, resulting in their application being rejected.

**Focussed Group Discussions**

- Overall awareness of the schemes by the government, except for KCC scheme, is very low among most farmers across the districts.
- Regarding credit, there is resentment over the insufficiency of credit received by farmers, in spite of availing credit facilities for agricultural purposes.
- Regarding insurance claims, only a small fraction of the sample farmers has previously made insurance claim in case of crop loss, with about 90% of the total farmers having never filed for an insurance claim.
- Majority of the farmers who received claim payments for crop loss insurance only received partial settlements. It was also evident that implementation and effectiveness of crop insurance schemes varied across different districts.
- Majority of the respondents expressed their discontent with the Pradhan Mantri Fasal Bima Yojana (PMFBY) scheme, citing various reasons such as inadequate compensation, declining demand for insurance, and unfavourable insurance policies.
- Awareness of storage facilities is very low among most farmers. The small and marginal farmers often sell their produce to the local traders and wholesale markets and do not store their produce.
- Some farmers reported limited availability of certain facilities, such as labelling, grading, and packaging. Storage practices and facilities in India may be limited, particularly among small and marginal farmers.
- Almost half the number of sample farmers believed that middlemen/arhatiyas determine the prices of produce and impact the choices and interpersonal relationships with farmers. In contrast, only 19% of sample farmers reported of middlemen having very low influence in farming activities.
5.6 District-wise Insights on Sale of Produce

Since sale of produce is one of the most crucial aspects of farmers’ welfare and is pivotal in evaluating success of any policy that’s aims at increasing farmers’ income, it is worth investing in a separate treatment for this specific field of inquiry in the survey.

Since this is a hyper localised inquiry, because much of the manner, method and matter of sale is very region-specific attribute, we delve deeper into district level findings in this section. In examining the mode of sale, we try to probe the reasons associated with the pattern observed and understand the current practices and challenges before farmers.

5.6.1 Assam

Dhemaji
- A majority of 70% farmers are selling through contract in the district, 23% sell in local or wholesale markets while only 6% are selling in APMC mandis. Contract sales can be thought of as the transactional relationship between traders/middlemen and farmers. They provide farmers with timely credit for farming expenses in exchange for the farmers' promise to sell their produce to them after harvest. More than 85% of respondents agreed that selling through local traders or middlemen is the best delivery channel.
- There are multiple issues in APMC mandis according to the respondents in Dhemaji which makes it a secondary choice for sale of produce. Farmers have given reasons such as low profit, longer waiting period, delay in getting payment for not going to APMC mandis and no government purchase facility in vicinity. Only 13% respondents said that they receive MSP in the APMC mandi which is concerning.
- 45% of respondents said that they are facing loss from crop prices compared to the expenses incurred. It can be inferred that farmers in the districts are not getting suitable prices for their crops from both APMC and local markets or middlemen. According to the farmers, due to emergency need of money they are compelled to sell their produce to the local traders and middlemen either in local markets or APMC mandis. Low quantity of produce is another reason for receiving lower prices for their produce.
- High expenses for inputs in seeds, fertilizers and irrigation is a challenge for 95% of respondents which explain that farmers are not earning enough from their produce in comparison to their spending. Farmers are receiving information on crop prices from traders and middlemen and also selling their produce to them.

Baksa
- Majority of sample farmers in Baksa are either selling their produce in local or wholesale markets (31%) or through contract (73%). Farmers selling in APMC mandis are negligible (2%) due to reasons such as low profits, longer waiting period and most importantly the mandis are very far. In accordance with multiple issues with sale in APMC mandis, 88% of respondents in Baksa prefers local traders or middlemen.
• Additionally, it can be observed that only 16% of respondents said they receive MSP in mandis. Therefore, naturally 49% of sample farmers said that they receive lower price on crops than the expenses incurred on cultivation. According to farmers, factors such as low quantity of produce and distress sale due to immediate requirement of money are reasons for getting lower prices.

5.6.2 Andhra Pradesh

Anantapur
• Only 2% of sample farmers are selling their produce through APMC mandi. They were of the opinion that in APMC mandis, they receive low profit, have to pay high commission rates, longer waiting time to sell and payments are delayed.
• 96% of respondents in Anantapur sold their produce through contract and around 78% are satisfied with the crop prices they are getting. Majority of sample farmers are getting price information for different crops through local mandis and traders or middlemen. Around 64% are of the opinion that selling through local trader or middlemen is the best option. This implies that majority of sample farmers in Anantapur are inclined towards sale of produce through contract with local trader or middlemen as they are receiving remunerative prices while they do not find it profitable to sell in APMC mandis.
• Their major issue in farming in Anantapur was found out to be high expenses in inputs, low access to credit while only 20% are reporting that low prices of crops are a challenge for them.

Krishna
• Agriculture practices are different in Krishna compared to Anantapur. Here more than 90% of respondents are selling their produce in APMC mandis while only 13% sell through contracts.
• 69% of sample farmers also said that they always receive MSP while selling their crop and only 18% said that they receive low price on crop than the expenses incurred. In concurrence with this, 61% of respondents think that selling through APMC mandi at the MSP price is the best option and only 42% consider selling through local trader or middlemen as a better delivery channel.
• The major issue faced by sample farmers in Krishna is high expenses in inputs and low access to credit.

5.6.3 Maharashtra

Nagpur
• 92% of sample farmers in Nagpur sell their produce in APMC mandis and only 20% sell in local or wholesale markets.
• Looking at the crop prices, 63% of respondents said they received lesser sale prices than the expenses incurred in cultivation while 47% said they always receive MSP. The reasons given by respondents for selling their produce at a lower price, 52% of the sample farmers said it was because they needed money right away. More than half of the sample farmers in the district are not receiving MSP even when selling in APMC mandi and may be forced to sell to a trader or middleman due to an immediate need for money.
• We can infer that majority of sample farmers in Nagpur rely on APMC mandis as they also receive information on crop prices from mandis and sell their produce in mandis. However, it is
contradicting as around 62% of sample farmers thinks selling through local trader or middlemen is the best delivery channel for them. It can be associated with the fact that it is the best option as after harvest, they have immediate requirement for money.

- Around 60% of sample farmers feel that low prices of crops are their biggest problem in farming followed by high expenses of inputs said by 35%.

**Solapur**

- Among the sample farmers in Solapur, 86% of sale is happening in local or wholesale markets and only 5% in APMC mandi. The reasons given for not going to APMC mandis are low profits and high commission rates in APMC mandis. Additionally, only 8% of respondents reported that they receive MSP in APMC mandis.
- The sample farmers are largely satisfied with selling through local trader or middlemen in local or wholesale markets as they think that is the best delivery channel. Around 80% said that they did not sell their crop at lower prices than the expenses incurred so the sample farmers are largely satisfied with the crop price they are receiving.
- The biggest concern for respondents is high expenses in inputs like seeds and fertilisers.

**5.6.4 Rajasthan**

**Pali**

- In Pali, only 34% of sample farmers are going to APMC mandis for selling their produce. The respondents who do not go to APMC mandis said that delay in getting payment while longer waiting periods are an issue for them. In addition to this, only 5% of total respondents said that they receive MSP in APMC mandis.
- Around 70% and 50% sale of produce in Pali is happening in local or wholesale markets or through contract.
- Almost 87% of sample farmers in Pali said they received lesser sale prices than the expenses incurred in cultivation. The reasons for this again emerged as immediate requirement of money after harvest and low quantity of produce. Due to larger number of small size agriculture lands, farmers do not have the advantage of economies of scale and are trapped in debt cycle with large trader or middlemen who assist them in form of easy credit. In order to pay back the credit taken and own consumption needs, distress sale happens.
- Naturally, it can be seen that majority of farmers said that high expenses in inputs like seeds and fertilisers and low prices received of crops are their biggest concern in farming.

**Churu**

- 62% of sample farmers sell their produce in local or wholesale markets while 50% sell through contract and only 12% are selling in APMC mandis. The reasons given by respondents for not going to APMC mandis are delay in getting payment and longer waiting period. Less than 1% farmers said they receive MSP in APMC mandis.
- Almost 80% sample farmers said they received lesser sale prices than the expenses incurred in cultivation. The reasons for this again emerged as immediate requirement of money after harvest and low quantity of produce.
- Around 90% prefer local trader or middlemen as delivery channel to help them sell more.
• Around 35% of total respondents in Rajasthan said online trading platforms will help them sell more. Majority of sample farmers are getting information on price through communities and neighbours.

• Their major issue faced is high expenses in inputs and low prices received of crops

5.6.5 Uttar Pradesh

Meerut
• About 81% of the sample farmers in Meerut sell their produce to local markets or wholesale markets but 50% also sell their produce at APMC mandis. Farmers that do not sell their produce to APMC mandis cited numerous reasons such as, bad behaviour from government employees at APMC mandis, paying high commission rates at the mandis and delay in receiving payment for the produce. Even though 47% of the sample farmers claim that they had to pay high commissions to sell their produce at APMC mandis, from the interviews with stakeholders and FGDs it was discovered that farmers are not required to pay any kind of fee/commission while selling at APMC mandis.

• About 65% of the sample farmers claimed that they do not always receive MSP while they sell their produce at APMC markets, 42% of the sample farmers also received lower prices than the money spent on cultivation. One of the major reasons for low prices of produce noticed was that farmers need to sell their produce right away as they need money urgently for the next season’s crop or to pay back the loans that they might have taken.

• The preferred delivery channel for farmers is also in conjunction with their mode of sale. Sample farmers in Meerut prefer to sell their produce to local markets or at MSP price.

• The major problems that farmers are facing currently in farming is low prices of crops and high expenses of inputs like seeds, fertilizers, irrigation, etc.

Kaushambi
• Majority of the sample farmers in Kaushambi sell their produce either at local markets or they sell their produce through contract.

• The uptake of agri-credit was also very low in the district. Some of the major reasons cited by farmers for not selling their produce at APMC mandis was longer waiting periods at APMC mandis, high commission charges at APMC mandis and low profit at APMC mandis.

• Only 5% of the sample farmers are selling their produce at APMC mandis as 96% reported that they do not always receive MSP for the sale of their produce. Even though the majority of the sample farmers in Kaushambi are not receiving MSP, they are not selling their produce at a lower price than the money spent on cultivation.

• The farmers that are getting low prices for their produce said that it is due to the fact that they have to pay high commissions at mandis. Since only 5% of the sample farmers are getting low prices for their produce and only 5% of the sample farmers are selling their produce at APMC; given the fact that the major reason cited for low prices of produce is high commission rates by the sample farmers that are getting low prices it can be assumed that the farmers that are selling their produce at APMC mandis are not getting compensated
properly while the others that are selling either to local markets or through contract are satisfied with the payment they are receiving.

- The most preferred delivery channel for the sale of produce is also to local markets or wholesale markets rather than APMC mandis. Since farmers are selling their produce through contact to middlemen or traders, they also are the major source of information when it comes to prices for different crops. The major problem faced by farmers is the high cost of inputs like seeds, fertilizers, irrigation, etc.
Chapter 6: Policy Conclusions

The descriptive analysis, along with the interviews with range of stakeholders across the four verticals has offered a rich understanding of what ails the farmers’ lives in India, particularly seen from the point of view of the farmers themselves. A number of policy insights emerge by deep diving into the data and listening to farmers’ felt needs across the states under study.

The recommendations have been proposed keeping in mind an understanding of preliminary feasibility, although each of these points will require separate investigation for estimating the efforts required to implement them. Some of the changes proposed are indeed fairly simple to execute, although potentially hugely impactful. Some others will have cost implications. This section outlines the findings and inferences based on the information from the primary data. The analysis was done based on various parameters with due consideration to the study’s objective. This section should be read alongside the descriptive analysis that we have done with extensive variables (Annexure V) and interview responses with government stakeholders (Annexure VI).

6.1 Technological Integration

Engaging with farmers and observing their responses to a range of questions, an important lacuna appeared, namely, there was no interlinking of the various schemes across farmer population. In other words, it was observed that sometimes, when a farmer is availing one scheme, he is usually not availing another one, despite the obvious synergies in the two. Surely, sometimes, schemes like KCC and PMFBY are packaged together, either the farmer is not aware of it, or otherwise, the schemes themselves are not linked to each other. This requires a technological intervention, and indeed, much like linking aadhaar with so many of government services, each of the schemes meant for a farmer in India can reap the benefit of network effects. Put differently, if database of farmers is created across one scheme, it can be made interoperable towards the technology of another scheme. Through this stacking, a vast number of schemes can be integrated together at the individual farmer/household level. This also highlights the importance of linking various complementary schemes.

It is therefore proposed that a digital farmers stack be created. A digital registry of each farmer on the stack would be created and they will receive an ID which will be unique to them. This could be centralised and be made accessible to all the relevant departments. This is similar to how a traffic police officer can access all the details of a vehicle with the help of the vehicle number. This will encourage building of synergies between various policies across credit, insurance, storage and marketing, and help examine and respond to policy issues in a very targeted manner. As the idea of doubling farmers’ income catches speed, such a digital stack will be invaluable for examining the speed and efficiency with which farmers-related schemes are being implemented. More importantly, it will reduce a number of needless procedural difficulties because – just like DigiLocker – farmers’ identity verification can be done through a machine. Once a farmer avails one scheme, information on the other schemes will instantly become available to him, and as his usage and response to one scheme is improving, so will other departments also begin pursuing him for better results. This can have significant positive spill overs within the village.
Consider the efficiency gains of this. Farmers will need to **submit their documents once**, and perhaps only update them over time if need be. The database will enable government to locate the most disadvantaged and inaccessible farmers, and banks and Block Development Officers could be encouraged to target their outreach. It will also arrest noncompliance. For example, if a farmer gets Kisan Samman Nidhi, and does not repay his KCC loan, his credit rating can go down, and his next instalment could be reduced, which incentivizes him to increase his credit rating. Similarly, for a farmer who has used e-NWR (digital receipts becomes easier too) or e-NAM can be given rebates by the bank looking at the corresponding entries in the portal itself, rather than having the farmer to produce a copy of the documents.

This **digital stack must be linked with farmers Aadhaar card, as well as land documents, including the ongoing SVAMITVA cards**. If a farmer gets a loan for a particular crop, all bankers can observe that by quoting the Aadhar number. This is not difficult and it may allow large amount of KCC data to be streamlined, which in turn will enable better and more targeted planning for next quarter/year. It will also arrest the tendency of duplication. This will allow populating one dashboard at the central level to monitor the process of availing KCC (and other Schemes) by the farmers right from the process of applying for KCC to sanctioning of KCC loan and the current status of KCC accounts of the farmers. Indeed, this will also accelerate digitisation of land records. Connectedly, having an **app/portal for the schemes** could also be invaluable. Over time, this can evolve the database on its own.

### 6.2 Creating awareness

The data indicates that most of the benefits from the schemes specifically related to storage and marketing, have not been successful primarily because of the lack of awareness amongst the farmers. This is unfortunate, because it was found that a considerable amount of felt needs of the farmers can be addressed using the prevailing schemes and government assistance ecosystem in India. Apart from a few schemes like Kisan Credit Card (KCC) and Pradhan Mantri Fasal Bima Yojana (PMFBY), most of the schemes have not been heard of by majority of the farmers in various districts across the country. Better awareness of these schemes will help farmers and ensure that the last mile of implementation is achieved.

A proposal here is to **piggyback or emulate local/state-level schemes** which have attracted significant adoption. For instance, Andhra Pradesh’s *Rhythu Bharosa Kendras* are unique entry points. The farmers of Andhra Pradesh were mostly aware of all the schemes that were promoted by the government for the welfare of the farmers and it includes crop credit, crop insurance, storage and marketing.

Two policies which have been least known by the farmers are e-NAM and e-NWR. Lack of knowledge about these schemes and consequent lack of adoption has led to a significant welfare loss since marketing and storage are real points of concern in the entire study. While the interest in e-NAM can be understood to be low given the informal network that the farmers have with the middlemen and arhatiyas, it is e-NWR that needs greater push. For most of the farmers, the geographical proximity
from the storage is a huge issue, but we believe that is not the entire problem. If the **e-NWR can be connected to efforts being made to increase awareness of KCC and PMFBY at the bank levels**, it can lead to significant impact.

Connectedly, the study and fieldwork also realized that farmers who are generally part of **Farmers Producers Organisation** are also more likely to be aware of the various schemes many others are not. In this sense, enlarging the FPO base and using those groups to spread awareness can be hugely valuable.

### 6.3 Developing Trust

A particular observation regarding PMFBY was that one of the reasons for many farmers who know about the scheme and who still do not opt for it is due to a lack of trust in the potential of securing money from the insurance companies should they file a claim. Majority of the respondents expressed their discontent with the Pradhan Mantri Fasal Bima Yojana (PMFBY) scheme, citing various reasons such as inadequate compensation, declining demand for insurance, and unfavourable insurance policies. Many inspecting agents simply do not engage with the claims of the farmers with empathy. Farmers have this notion that the companies will simply not reimburse them their claims, and often, more than the premium, it is the feeling of betrayal, and indeed the transaction cost that discourage them from opting for the PMFBY. The ongoing legal case involving farmers in Marathwada is a case in point.

There is a strong need for government to undertake a **drive of trust building**. One way to do this is to celebrate and popularize successful stories in PMFBY. Another is to create interesting, insightful pamphlets. A large part of policy success and implementation is the messaging and **policy communication**. In this regard, there have been various advancements in the field of advertising and content creation. A good idea here could be to **involve students of design schools in India** and have them come up with creative content that can be displayed outside the banks or sent in the form of an SMS or mobile phone creative. Students often develop the most creative solutions for complex messages, without being expensive. Their study, curriculum and work reflect understanding of consumers’ minds (farmers in this case). They will visit rural India, understand how the target population thinks and absorbs information and develop a semester project on creating and delivering the right messaging in order to enhance the uptake of the Scheme, and more particularly, the associated aspects (like PMFBY or PRI and even the newly announced modifications like enabling KCC to be used for animal husbandry, dairy, fisheries and the like).

The problem is more complex with e-NAM, because it tends to enter the domain of farmer-middleman relationship. Be that as it may, there are still some low hanging fruits. In particular, many farmers are not very trustworthy of internet-based pricing system or even e-trading. Here, the government can take help from an invaluable resource present in almost all the villages of the country. **The Nehru Yuva Kendra (NYKS) volunteers can be used for support** in helping farmers use e-NAM (or even e-NWR for that matter). These volunteers can be trained and involved in enabling disbursements of many schemes of the government. The panchayat can be engaged in these training programmes, and this
will also go a long way in strengthening the decentralized imagination of governance in Indian villages. This will also allow a seamless connection between the bank and farmers through these volunteers. Over time, a method to institutionalise some form of grievance redressal at the local branch itself could be implemented through these partnerships. This will need a collaboration at central or state level, but can reap significant dividend if adopted properly. For e-NAM, the government should make it mandatory for APMC mandis to be registered with e-NAM so the farmers have more faith in the system and will regularly deal with APMC mandis.

6.4 Procedural Simplicity

A significant number of farmers expressed dissatisfaction about the procedures that must be followed in availing the benefits of credit, insurance, storage and marketing. The reduced uptake for credit and insurance is majorly because of the procedures, so despite the benefits, there is reluctance on the part of the farmers to avail these benefits.

We learnt that farmers have a major psychological bottleneck with respect to transaction cost in availing any scheme from the government. For them, the hassle of procedures is significantly costlier because of their high discount rate for future arguably. They prefer that banks could procure their land documents directly from the online system provided by the government, which will reduce the hassles of the farmers by approaching the Talati office to get land documents themselves. Providing links to the Digilocker could be helpful and could be used effectively if the farmers are educated about providing the bank with the necessary access to their documents.

Connectedly, several states have followed land digitization system and it is easier for the farmers and banks (as mentioned above) to procure land documents. With digitization, the partition of property is mentioned on the records with proper land allocation for each individual in the family, further helping each farmer to apply for credit based on his piece of land.

The procedure of assessing the extent of the destruction of the crops to ensure proper disbursement of the insurance amount is a lengthy process and this could be changed to a simplified and expedited manner. The farmers have expressed lack of faith in the insurance system because of the delay in the assessment procedure and the following process of the insurance disbursement. There have been several digital interventions to make the process easier, but it still contains several bottlenecks from the point of view of the farmers. With low connectivity and website issues that routinely affect them, farmers are often found wanting.

The website issue cannot be ignored, because many times, the government online portals for many schemes are designed so poorly, both in terms of user navigation and language as well as inability to load that farmers lose interest. Note that farmers are not the most technologically savvy consumers, and therefore, they may not be able to send technical error reports to the website vendor, or even file complaint online. The solution is to involve design students engage with farmers with those websites, observe their (user) behaviour and locate the pain points in those websites which should be rectified. For all new schemes, the website vendors need to be responsive and creative in designing
an easy-to-use and light website/app. This is one of the low-hanging fruit, with huge potential for change with little cost.

The study revealed an urgent need for **technological and financial literacy training for farmers**. The farmers should be educated about the ease of following the procedure of e-NWR so they can avail credit against the stored produce. The farmers should also be educated about the benefits of using online trading for marketing of their produce so they can fetch a better price while dealing with traders and commission agents. The lack of knowledge of how to use the online system effectively results in avoiding of these schemes. The procedure could be simple if the farmers are provided training on how to use the system. The banks can initiate regular workshops to educate the farmers on the use of the online system and at the same time, they can find out what are the glitches that they face while using an online system. **This can also happen very effectively through local schools and colleges**, where special sessions could be conducted and children of farmers who are studying in the school can educate their parents.

6.5 APMC and MSP

The farmers have generally been averse to selling their produce at Agriculture Produce Market Committee (APMC) mandis and rather prefer to sell it at the local markets or through middlemen and contractors. The government should ensure measures to improve the faith of the farmers on APMC mandis by regulating the charges across the country.

- **Regulate APMC mandi charges**: The mandi charges are found to be at extremes in different districts across the country. The high mandi charges prevent the farmers from selling their produce at APMC mandis and resorting to liaising with middlemen and contractors who wouldn’t provide them good prices.

- **Setting up collection centres**: The farmers have expressed their displeasure over the distance of the APMC mandis, thereby increasing their transportation costs. Government could ensure that collection centres are set up in close vicinity to the farmers thereby reducing their transportation costs to sell their produce at the mandis.

- **Mechanism for proper disbursal of Minimum Support Price (MSP)**: It has been observed that the farmers have been willing to sell their produce at APMC mandis only because of the MSP that is given to them. This is seen even in places where the APMC charges are high, showing the impact of MSP on the mode of sale. The locations where MSP is not given or very few farmers are given MSP, are not finding favour with the farmers to sell their produce at APMC mandis. Government should bring in a mechanism to ensure transparent and uniform disbursal of MSP to restore the faith of the farmers on APMC mandis.

It was becoming abundantly clear engaging with the farmers that a law at central or state level which enables farmers to market their own crops is badly needed. If it can be done at either level, through some pilots, it can lead to significant gains in farmers’ welfare.
6.6 Storage Infrastructure

Apart from lack of awareness, we realized that farmers perceive that there is a dearth of storage facilities across districts in the country. Indeed, as it appears from the ground, storage is perhaps the most neglected aspect by the government from amongst the four pillars of our study. Even the farmers who are aware of the storage schemes, have to resort to immediate sale because of the lack of proper storage facilities, or distant location of the godown. There is a need to improve storage facilities to better meet the needs of farmers, which could lead to more efficient and effective storage practices, and ultimately, better economic outcomes for farmers. Government must ensure that storage infrastructure is ramped up along with revamp of existing storage facilities. Storage helps the farmers to sell their produce during better prices to maximise profits. Therefore, it is crucial to focus on developing affordable and accessible storage facilities, that can help farmers to store their produce safely and securely.

It is proposed that creation of storage infrastructure could be incentivized through tax exemptions, in order to attract more private participation. Further, charges of these government storage facilities should be reasonably low and should be affordable by most farmers. A database of the past and prevailing charges can help develop an index of pricing for storage, and that can be adjusted for every year, adjusting for inflation. This will also allow a certain level of predictability to be created in terms of prices. Government should ensure a ceiling on the charges of private storage facilities so they can flourish along with the government storage facilities but not at the cost of financial loss to the farmers.

From the perspective of the farmers, there is a need to review and revise the loan amount granted to farmers, such that they are not compelled to seek credit from non-institutional sources. In the event of crop loss, farmers often resort to various measures to make up for their losses, for instance, selling livestock, borrowing money from friends and family or borrowing money from money lenders. There is a need to review the measures to compensate for crop loss in an effective way, possibly by revamping the insurance aspect or some effective way to provide relief on the lines of PMKSN. Most farmers reported lack of facilities for cleaning, grading, packaging, loading and unloading goods. The influence of intermediaries also extends to market choices of farmers, such as the type of products and pesticides used and therefore, it is essential to understand the issue of intermediaries in the agriculture marketing system, and measures should be taken to minimize their influence on farmers' choices and prices.
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### Annexure I: Survey Questionnaire

<table>
<thead>
<tr>
<th>SL. No.</th>
<th>Question</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1.</td>
<td>Sample Code</td>
<td>A. Marginalized Group</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B. Female Farmer</td>
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<tr>
<td></td>
<td></td>
<td>C. Other Farmers</td>
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<tr>
<td>A2.</td>
<td>State</td>
<td>A. Andhra Pradesh</td>
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<td></td>
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<td>B. Assam</td>
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<td>C. Maharashtra</td>
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<td>D. Rajasthan</td>
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<td></td>
<td>E. Uttar Pradesh</td>
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<td>A3.</td>
<td>District</td>
<td>A. Ananthapur</td>
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<td></td>
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<td>B. Krishna</td>
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<td></td>
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<td>C. Dhemaji</td>
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<td>D. Baksa</td>
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<td>E. Nagpur</td>
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<td>F. Solapur</td>
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<td>G. Pali</td>
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<td>H. Churu</td>
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<td>I. Meerut</td>
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<td>J. Kaushambi</td>
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<td>A4.</td>
<td>Village Name</td>
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<td>B1.</td>
<td>Name of Respondent</td>
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<td>B2.</td>
<td>Age</td>
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<td>B3.</td>
<td>Gender</td>
<td>1. Male</td>
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<td>2. Female</td>
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<td>3. Transgender</td>
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<td></td>
<td></td>
<td>4. Others (Specify)</td>
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<tr>
<td>B4.</td>
<td>Education</td>
<td>A. No Education</td>
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<td></td>
<td></td>
<td>B. Below Primary</td>
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<td></td>
<td></td>
<td>C. Primary (Up to 5&lt;sup&gt;th&lt;/sup&gt;)</td>
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<td>D. Middle (up to 8&lt;sup&gt;th&lt;/sup&gt;)</td>
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<td>E. Secondary (up to 10&lt;sup&gt;th&lt;/sup&gt;)</td>
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<td>F. Senior (up to 12&lt;sup&gt;th&lt;/sup&gt;)</td>
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<td></td>
<td></td>
<td>G. Graduate and above</td>
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<td></td>
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<td>H. Others (Specify)</td>
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<tr>
<td>B5.</td>
<td>Primary Occupation</td>
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<td>B6.</td>
<td>Secondary Occupation</td>
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<td>B7.</td>
<td>Family Size</td>
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<td>B8.</td>
<td>Number of Earning Member</td>
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<td>B9.</td>
<td>Monthly Household Income (Approx.)</td>
<td></td>
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<tr>
<td>B10. A.</td>
<td>Do you own a smartphone?</td>
<td>1. Yes</td>
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<td></td>
<td></td>
<td>2. No</td>
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<tr>
<td>B10. B.</td>
<td>Does your phone have internet connectivity?</td>
<td>1. Yes</td>
</tr>
</tbody>
</table>
| B11. | Where do you get the information regarding the new scheme, procedures for application in Agriculture? | 1. BDO  
2. Banks  
3. Agriculture  
4. Department  
5. Gram Sabha  
6. Tehsil office  
7. Local community  
8. Other Specify |
| C1. | Type of Land | 1. Owned & farmed  
2. Shared ownership  
3. Not owned but leased land/tenant  
4. Owned & leased out land  
5. Not farmed at all  
6. Other Specify |
| C2. | Size of Land (Use Size Chart to convert in acre) | Record Land size in acre |
| C3. | Types of crops grown | 1. Wheat  
2. Paddy  
3. Millet  
4. Pulses  
5. Vegetables  
6. Cotton  
7. Oil  
8. Seeds  
9. Sugarcane  
10. Others (specify)  
11. Not Applicable |
| C4. | Number of Harvests (How many times in a year are crops cut?) | |
| C5a | What is your total family income from all sources? | |
| C5b | What is your total family income from only Farming? | |
| C5c | Income per acre from the produce for the last year | |
| C6. | Are you a PM Kisan beneficiary? | 1. Yes  
2. No |
| D1. | Are you aware of government credit scheme? | 1. Yes (Specify)  
2. No |
| D2a | Have you received any credit (loan) for farming? | 1. Yes  
2. No |
| D2b | Amount of loan received last year for farming | Record amount in Rs. |
| D3 | Was the loan amount sufficient for you to meet the expenses of your crop land size? | 1. Yes  
2. No |
| D4 | How did you find the application process for applying for the scheme? | 1. Easy  
2. Moderate  
3. Difficult  
4. No Answer |
| D5 | Where did you get this loan from? | A. KCC scheme (Agri Credit)  
B. SHGs  
C. JLGs  
D. Cooperative societies  
E. Other bank loans  
F. Moneylenders  
G. Microfinance institutions  
H. Friends  
I. Family  
J. Others Specify  
K. Not Applicable |
| D5a | If the loan was not taken from Agri-credit, why did you resort to other institutional loans or non-institutional sources of loan over agriculture credit? | A. Increased loan amount as compared to Agri-credit  
B. Hassle-free procedure  
C. Lack of institutions providing agriculture credit  
D. Technical and legal hindrances limiting their options for Agri-credits  
E. Lack of institutional credit at affordable interest rates  
F. Other Specify |
| D6 | Are you a member of SHGs, JLGs, FPOs, any collective organization (specify)? | 1. Yes (Specify)  
2. No |
| D7 | Would you agree it would be easier to avail agriculture credit if you were a member of any JLGs or Cooperative societies? | 1. Yes  
2. No  
3. No Answer |
| D8 | What are the concerns in approaching a bank for the credit? | A. Distance  
B. Complexity of procedure or multiple visits  
C. Lack of documents  
D. Other (Specify) |
| D9 | Have you used an agriculture loan for non-farm activies? | 1. Yes  
2. No |
| D10 | Purpose of crop loan used for non-agriculture | 1. Health  
2. Household  
3. Marriage  
4. Education  
5. Others specify |
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<td>D11.</td>
<td>Why were you not able to access any agriculture credit scheme yet?</td>
<td>6. No Answer</td>
</tr>
<tr>
<td></td>
<td>A. Did not fall under the eligibility criteria</td>
<td></td>
</tr>
<tr>
<td></td>
<td>B. No Land ownership</td>
<td></td>
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<tr>
<td></td>
<td>C. No awareness</td>
<td></td>
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<tr>
<td></td>
<td>D. Lack of resources</td>
<td></td>
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<tr>
<td></td>
<td>E. No Security</td>
<td></td>
</tr>
<tr>
<td></td>
<td>F. Legal/technical hindrances</td>
<td></td>
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<tr>
<td></td>
<td>G. Gender discrimination</td>
<td></td>
</tr>
<tr>
<td></td>
<td>H. Not a member of any cooperative society/JLGs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I. Inaccessibility to access banks</td>
<td></td>
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<tr>
<td></td>
<td>J. Past NPAs</td>
<td></td>
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<tr>
<td></td>
<td>K. Other, specify</td>
<td></td>
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<tr>
<td>D12.</td>
<td>What do you think can be improved to increase farmers’ access to credit for agriculture?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A. Simplify existing scheme procedures</td>
<td></td>
</tr>
<tr>
<td></td>
<td>B. Low interest rates</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C. Higher loan amount</td>
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<td></td>
<td>D. Improve access to credit infrastructure</td>
<td></td>
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<tr>
<td></td>
<td>E. Other (specify)</td>
<td></td>
</tr>
<tr>
<td>E1.</td>
<td>Are you aware of government crop insurance scheme?</td>
<td>1. Yes (Specify)</td>
</tr>
<tr>
<td></td>
<td>2. No</td>
<td></td>
</tr>
<tr>
<td>E2.</td>
<td>Did your crop get destroyed in the last one or two years?</td>
<td>1. Yes</td>
</tr>
<tr>
<td></td>
<td>2. No</td>
<td></td>
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<tr>
<td>E3a.</td>
<td>Have you used ever crop insurance?</td>
<td>1. Yes</td>
</tr>
<tr>
<td></td>
<td>2. No</td>
<td></td>
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<tr>
<td>E3b.</td>
<td>How often do you insure your crop?</td>
<td>1. Always</td>
</tr>
<tr>
<td></td>
<td>2. Sometimes</td>
<td></td>
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<tr>
<td></td>
<td>3. Rarely</td>
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<td></td>
<td>4. Never</td>
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<td></td>
<td>5. Not Applicable</td>
<td></td>
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<tr>
<td>E4.</td>
<td>What was the reason for getting crop insurance?</td>
<td>A. To protect against losses</td>
</tr>
<tr>
<td></td>
<td>B. Plantation/Horticulture</td>
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<td></td>
<td>C. Made mandatory by banks.</td>
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<td></td>
<td>D. Others Specify</td>
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<td>E5.</td>
<td>If never, what is the main reason for not opting for crop insurance:</td>
<td>1. Shortage of money</td>
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<td>2. Insurance policies not in favour of farmers</td>
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<td></td>
<td>3. Believe that there is corruption involved.</td>
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<td></td>
<td>4. The agency may not give your rightful compensation</td>
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<td></td>
<td>5. Never felt the need for insurance</td>
<td></td>
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<td></td>
<td>6. Insurance facility is not available</td>
<td></td>
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<td></td>
<td>7. Found the process to be difficult</td>
<td></td>
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<td></td>
<td>8. Other (Specify)</td>
<td></td>
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<td>E6.</td>
<td>What are the reasons for destruction of crops in your area?</td>
<td>A. Weather</td>
</tr>
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<td></td>
<td>B. Insect</td>
<td></td>
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<tr>
<td></td>
<td>C. Natural calamity</td>
<td></td>
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<td></td>
<td>D. Power issues</td>
<td></td>
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<td></td>
<td>E. Animal/bird attack</td>
<td></td>
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<td>Question</td>
<td>Options</td>
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</table>
| 7 | Are you aware of the complete procedure for insuring the crop under insurance scheme? | 1. Fully aware  
2. Partially aware  
3. Not aware |
| 8 | What are the issues you faced when applying for scheme?                 | A. No prior knowledge  
B. Documents Unavailable  
C. Legal/Technical Issue  
D. Types of Crops  
E. Type of Land  
F. Others (Specify) |
| 9 | Are you aware about the extent of crops covered by the insurance agency? | 1. Fully aware  
2. Partially aware  
3. Not aware |
| 10| Are you aware of the premium that is required to be paid by you?        | 1. Fully aware  
2. Partially aware  
3. Not aware |
| 11| Are you aware of the method of loss determination and compensation determination? | 1. Yes  
2. No |
| 12| Are you aware of the agencies paying compensation for your claims?      | 1. Fully aware  
2. Partially aware  
3. Not aware |
| 13| In case of crop loss, what are the alternative measures taken apart from crop insurance? | A. Bank loan  
B. Sale of fixed assets  
C. Sale of livestock  
D. Money lenders  
E. Microfinance  
F. Friends and family  
G. Govt. relief  
H. Other (Specify)  
I. None |
| 14| Which alternative measure do you prefer the most?                       | A. Bank loan  
B. Sale of fixed assets  
C. Sale of livestock  
D. Money lenders  
E. Microfinance  
F. Friends and family  
G. Govt. relief  
H. Other (Specify) |
| 15| Do the insurance company requirements to provide insurance limit you from growing the crops you wish to grow? | 1. Yes  
2. No |
| 16a| Have you ever made an insurance claim?                                  | 1. Yes  
2. No |
| E16b. | Did you ever receive insurance money on the claim you made? | 1. Yes  
2. No |
|---|---|---|
| E17. | If yes, did you receive | 1. Full settlement claim  
2. Partial settlement of claim (specify reasons for partial settlement) |
| E18. | Will you apply for crop insurance scheme in future? (for those who have not applied) | 1. Yes  
2. No |
| E19. | Will you continue to get crop insurance? (For those who have already applied for insurance before) | 1. Yes  
2. No |
| F1. | Are you aware of government storage schemes? | 1. Yes (Specify)  
2. No |
| F2. | Are you aware of the government marketing scheme? | 1. Yes (Specify)  
2. No |
| F3a | After harvest, do you undergo any secondary processing or value additions? | 1. Yes  
2. No |
| F3b | For which crops? | A. Wheat  
B. Paddy  
C. Millet  
D. Pulses  
E. Vegetables  
F. Cotton  
G. Oil  
H. Seeds  
I. Sugarcane  
J. Others (specify) |
| F4. | Do you store your farm produce? | 1. Yes  
2. No |
| F5 | If yes, where do you store it? | 1. Government storage facility  
2. Private storage facility  
3. Own storage facility |
| F6. | If not, why not? | A. Cannot afford,  
B. Very high charges  
C. Very less quantity of produce  
D. No storage facility available  
E. Facility is far away  
F. Need to sell immediately for money  
G. Other (Specify) |
| Q7. | Do you think you would get better prices for your produce after some months if you had the facility of storage? | 1. Yes  
2. No |
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<tr>
<td>Q8.</td>
<td>Do these services exist in your storage/warehouse facility?</td>
<td></td>
</tr>
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</table>
| F8 A. | Platform for loading/unloading, , , | 1. Yes  
2. No |
| F8B | Facility for cleaning | 1. Yes  
2. No |
| F8C | Facility for grading | 1. Yes  
2. No |
| F8D | Facility for labelling | 1. Yes  
2. No |
| F8E | Facility for packaging | 1. Yes  
2. No |
| F8F | Availability of space | 1. Yes  
2. No |
| F9a. | Do these storage facilities charge for using their facilities? | 1. Yes  
2. No |
| F9b | If Yes, how much? (Rate per quintal) |  

| Q10. | Have you heard of Negotiable Warehousing Receipts? | 1. Yes  
2. No |
| Q11. | Have you availed its benefits? | 1. Yes  
2. No |
| Q12. | What is the mode of sale for your product? | A. APMC regulated markets  
B. Local Market Wholesale markets  
C. Middlemen  
D. Contract  
E. Self-use  
F. Others (Specify) |
| Q13. | If not to APMC markets, what is the reason for not selling it to the government? | A. Low profit/ Good prices in open market  
B. Bad behavior of Govt. officials  
C. High commission rates  
D. Have to wait for days to sell a crop  
E. Lack of storage facility at the center  
F. Delay in getting payment  
G. Govt agency does not have facility to buy my crops  
H. No Govt purchase center in the nearby vicinity |
| Q14. | If sold to middlemen/arhatiyas, what are the reason influencing your decision | A. Easier to sell  
B. To repay credit taken for the middlemen in lieu of their produce  
C. Better prices than mandis |
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<th>Question</th>
<th>Options</th>
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<tr>
<td>F15. How much influence does middlemen/arhatiyas have in the local market/village?</td>
<td>1. High influence: they can set prices and most of choices by farmers, interpersonal relationships with farmers 2. Medium influence: they can influence crops prices, they can play a role in market choices of farmers (type of products, pesticides, etc.) 3. Low influence: do not influence crops prices, type of crops etc.</td>
</tr>
<tr>
<td>F16. What difficulty do you face while taking your produce to the mandi?</td>
<td>A. No access to transport facility  B. Mandi is very far  C. High charges for transport facility  D. Other Specify</td>
</tr>
<tr>
<td>F17. How much does mandi charge for selling your produce?</td>
<td>Record amount in Rs.</td>
</tr>
<tr>
<td>F18. Do you always get the MSP price while selling at APMC mandis?</td>
<td>1. Yes  2. No</td>
</tr>
<tr>
<td>F19. Did you sell your last harvest at a lower price than the money spent on cultivation?</td>
<td>1. Yes  2. No</td>
</tr>
<tr>
<td>F20. What are the reasons for low selling prices for your produce?</td>
<td>A. Low quantity of produce  B. High commission and taxes in mandis  C. Substandard quality  D. Emergency sale for urgent need of money  E. Other Specify</td>
</tr>
<tr>
<td>F21. Do you sell your produce in any other place than your local market?</td>
<td>1. Yes  2. No</td>
</tr>
<tr>
<td>F22. What was the reason for going to another market?</td>
<td>A. Low prices in local market  B. High commission fee/tax  C. Lack of value addition services  D. Inadequate storage facility  E. Other Specify</td>
</tr>
<tr>
<td>F23. If yes, what issues did you face?</td>
<td>A. Distance from your house  B. Lack of transport  C. Opposition from local mandis/Traders or commission agents  D. Poor road infrastructure  E. Other (specify)</td>
</tr>
<tr>
<td>F24. If not, why not?</td>
<td>A. Market restrictions/ permit issues  B. Do not want to  C. Issues of distance and time  D. Lack of information  E. Other(specify)</td>
</tr>
<tr>
<td>F25. Have you heard about e-NAM?</td>
<td>1. Yes  2. No</td>
</tr>
<tr>
<td>Question</td>
<td>Options</td>
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| F26. If yes, have you registered on the platform and participated in an e-auction for your product? | 1. Yes  
2. No |
| F27. If yes: How are the Infrastructural facilities under e-NAM such as assaying (quality testing), e-auction, weighing, etc. | A. Very Satisfactory  
B. Satisfactory  
C. Neutral  
D. Unsatisfactory  
E. Very unsatisfactory |
| F28. Is your APMC mandis registered on e-NAM?                             | 1. Yes  
2. No |
| F29. If given a choice, would you want to sell your produce in online marketplaces (e-NAM)? | 1. Yes  
2. No |
| F30. Do you think sowing cash crops will improve your income?              | 1. Yes  
2. No |
| F31. What according to you are cash crops?                                | Record name of crops |
| F32. What are the reasons preventing you from sowing these crops?          | A. High inputs costs  
B. Agro-climatic conditions  
C. Lack of knowledge  
D. No storage facility  
E. Lack of access to credit  
F. Other(specify) |
| F33. What delivery channel would help you sell more?                      | A. Local trader/ middlemen  
B. Government MSP price  
C. Online trading platforms  
D. Reaching supermarkets or exporters  
E. Direct access to shop  
F. Other – Specify |
| F34. Where do you receive price information for different crops?          | 1. Local mandis  
2. Traders/Middlemen  
3. Community/neighbors  
4. E-trading platform  
5. FPOs  
6. Other – Specify |
| F35. How do you think you can increase your profit or income from farming?| 1. Increasing production  
2. I would sell more/earn more only if I change product  
3. Diversify my activity (livestock/ poultry) or crop  
4. Job in different sector  
5. Be a part of FPOs/ JLGs  
6. Other – Specify |
| F36. What investment you would like to make in farming to increase your income? | 1. Tractor  
2. Irrigation system  
3. Storage  
4. Better seeds & fertilizers  
5. Livestock  
6. Poultry  
7. Other – Specify |
| F37. | Will you take long-term loan for investment for this (KCC, Agri Infrastructure Fund/ AMI)? | 1. Yes  
2. No |
| F38. | Have you heard about Farmer Producer Organizations? | 1. Yes  
2. No |
| F39. | Any association with a private company/ FPOs/ Agri Start Up; JLGs? If yes, which one? | 1. Yes  
2. No |
| F40. | If yes, what are the benefits of joining FPO/ JLGs/ Agri start-up? |  |
| F41. | What is one of the major problems that you are facing currently in farming? | 1. High expenses in inputs (seeds, fertilizers, irrigation etc.)  
2. Low access to credit  
3. Low prices on crops  
4. Presence of intermediaries  
5. Excess government control in many fields |
| F42. | What is your perception towards e-Trading/ e-Markets? | 1. Do not trust digital technology  
2. No knowledge of online transaction process  
3. Sale process is complicated  
4. Delay in receiving online payment  
5. Discovering prices is cumbersome, and sorting facilities  
6. Disrupt relations with traders  
7. Other-Specify |
| F43. | What kind of assistance do you require from the government? |  |
| F44. | Are you aware of contract-farming? | 1. Yes  
2. No |
| F45. | Do you engage in contract farming? | 1. Yes  
2. No |
| F45 A. | If yes then, Do you think contract farming is easier and hassle-free as compared to self-farming and selling? | 1. Yes  
2. No |
| F45 B. | What problems do you face as part of contract-farming? | 1. Yes (Specify)  
2. No |
| F45 C. | Are you happy with your contract or do you feel exploited? | 1. Yes  
2. No |
Annexure II-A: Questionnaire for State Agriculture Marketing Board

AMI Scheme

1. Developing and upgrading Gramin Haats as GrAMs as a local aggregation point and direct marketing is one of the main focuses of the scheme. What is the status of these GrAMs. Have they enabled direct sale to consumers and bulk purchases? How do they function? Do farmers bring their produce to these markets?
2. How is the Board approaching the infrastructural development of these RPMs/GrAMs. What is the process of availing subsidy under the scheme by the state government? Which agencies are majorly involved in these activities?
3. What is the step-by-step process in sanctioning and releasing bank loans and subsidies?
4. Do you organise training programmes related to agricultural marketing including grading, standardisation and quality certification? How is the participation from farmers?
5. How do they assess the performance of the scheme? Do they submit yearly reports to DMI? Do they collect data at state level about the number of projects and subsidies sanctioned?

Procedural Questions

6. How many types of markets are there in your state? Name the markets where farmers bring their produce to sell?
7. How does one as a trader receive a licence for trading in the market?
8. Can the state marketing board try to manage the price fluctuations of agricultural produce? And how?
9. Have the mandis in your state set up e-auction halls and storage facilities for the smooth functioning of e-NAM? More in detail about eNAM
10. Farmers’ willingness to join/ impediment in its functioning?
11. Awareness level about schemes?
12. Reduction in post-harvest loss?
13. Is there produce wastage in your state? How do you deal with the produce wastage? And how can agricultural produce wastage be avoided?

Opinion Based Questions

14. Reforms in agriculture marketing is aimed at promotion of competitive alternative agricultural marketing infrastructure by encouraging private and cooperative sector investments.
15. What is the status of private and cooperative sector investment in marketing and storage infrastructure? How much? If it is low, what are the possible reasons?
16. What measures should be taken to promote the private entrepreneur’s/company’s investment under the scheme in the state?
17. Do you think that the support provided through AMI scheme and eNWR has improved the access to institutional credit for farmers?
18. Has reducing the number of intermediaries and building supply value chains helped in promoting direct marketing?
19. Do you think a centralised system for marketing would be more beneficial to the farmers or a localised approach is better? And why?

20. What in your opinion are certain changes that need to be made in order to improve access to marketing and ensure remunerative prices to small and marginal farmers?

21. How beneficial has the adoption of the Model APLM act, 2017 been? What is your opinion about a unified online platform/national for marketing?
Annexure II-B: Questionnaire for State Warehousing Corporation

1. What is the process of registration for warehouses according to The Warehousing (Development and Regulation) Registration of Warehouses Rules, 2017

2. How does an e-NWR work? Is the electronic receipt successful in addressing the shortcomings of the previous physical copy?

3. Given that there is a lack of technological know-how, how popular are e-NWRs amongst farmers? What kind of farmers are applying for e-NWRs (big farmers/small and marginal farmers).

4. What is the process for issuing the Negotiable Warehouse Receipts (NWRs)? How easy is the process? And what are the barriers in the process?

5. What is the awareness level about NWRs among farmers? Any estimate about how many NWRs is issued by the state in a season?

6. What can be done to expand the coverage of eNWR among farmers?

7. Do you organise awareness programs about different warehousing facilities/benefits of using eNWR that are available to the farmer?

8. WDRA introduced multiple changes in rules and regulations according to the transformation plan in 2015-16. How have things improved since the new rules have been adopted in 2017?

9. In 2017, 2 repositories were created for the creation and management of e-NWRs. How do these repositories’ function? And how have they benefited the e-NWR set up?

10. Is there a standard operating procedure (SOP) for warehouse inspection, monitoring and management followed by the state government?

11. What are the benefits to warehouse owners of registering the warehouse with the government?

12. Government is working towards developing warehousing capacity through several schemes since 2001. How will you rate the performance of these schemes in achieving the objective?

13. Any suggestions in terms of any structural changes in policies or support from the state government?

14. There is a huge gap between food grain production and warehousing capacity in the country even after several reforms since 2010. What changes would you suggest in the current system to increase the storage capacity fast?

15. In recent years, private warehousing capacity has increased manifold while public storage capacity is on a downward trend. What according to you are the reasons for this?
Annexure III-A: Questionnaire for the Interview with LDM

Credit

1. What are the different long term loan options available to farmers for investment in fixed productive assets?
2. Should long term loan options for farmers be promoted? And why?
3. What is the uptake level of the long-term loan facility under KCC for investment in fixed assets for farmers?
4. What are the reasons for low interest in loans for long term investment amongst farmers?
5. What do you think could be done to improve the credit accessibility of farmers?
6. Do you think fragmentation of land is a challenge for farmers to obtain a sufficient amount of credit? Also, do you believe that credit should not be given to farmers on the basis of land ownership but on the basis of income range?
7. How is Scale of Finance (SOF) a factor in estimating the loan amount for KCC?
8. NABARD is of the opinion that the One State One Scale of Finance Model will be beneficial. How easy or difficult is it to make SOF uniform across districts to provide better benefits to farmers in KCC loan amounts to maintain ease of understanding and procedures?
9. Does the bank prefer to give loans to farmers with land in order to have assurance of repayment?
10. Is there a practice of requiring collateral for loans less than Rs 1.6 lakhs? Or banks keep a mention of the loan in land documents (Khatuani) of farmers for the record?
11. Are the farmers aware about Prompt Repayment Incentive (PRI)?
12. Do farmers divert KCC loans to various purposes, or is it fixed in the loan document and in practice?
13. What do you consider are the structural challenges of the KCC scheme?
14. What can be done to improve institutional access to credit for farmers?

Insurance

1. What is a better set up for crop insurance, area-based crop insurance or weather-based crop insurance? And why?
2. What is your opinion about PMFBY? Do you agree with its approach of insurance to mitigate the crop losses faced by farmers?
3. What is the awareness level about crop insurance schemes popular among farmers?
4. What can be done to increase the popularity of crop insurance?
5. What are the operational challenges with PMFBY?
6. What are the structural challenges with PMFBY?
7. Are farmers receiving their claim in case of crop losses? What are some of the obstacles faced by farmers to receive the benefits?
8. Do you think the public private partnership (PPP) model is suitable for crop insurance? If not, what alternative model will function better for extending the benefit of crop insurance to farmers?
9. What would you suggest for improving crop insurance in India?
10. Will the crop insurance schemes benefit from the digitisation of the crop insurance process?
Annexure III-B: Questionnaire for APMC/ Agro-Marketing Officer

General

1. How are the members of the APMC committee chosen and what are their responsibilities?
2. How does one as a trader receive a license for trading in the market? Do they pay any fee to the APMC, how much?
3. What is the status of marketing infrastructure in your mandi? Has it improved in recent years?
4. APMC must provide infrastructure facilities and services, set up an e-auction hall and storage facility for smooth functioning of e-NAM. What is the status of these facilities in mandis since 2016?
5. What are the marketing/commission fee or tax mandated by the mandis to farmers for selling their produce?

Opinion

1. What are the problems faced by farmers in the existing marketing system in selling their produce?
2. What are some of the changes you would suggest to improve the agricultural marketing system?
3. Multiple reforms through the Model Act to remove legal restrictions are brought by the government which are slow paced. What do you think are the challenges in adopting these changes and how should we address them?
4. Can you give some details/data of marketing infrastructure sanctioned and created under the AMIGS scheme or any other scheme?
5. After creation of common facilities under the scheme how many farmers/traders aggregators/producers have benefited?
6. What additional infrastructure is required in the mandi?
7. Do you think the infrastructure created under the scheme is beneficial for farmers?

8. Are farmers aware of the major marketing and storage schemes?
Annexure IV: Questionnaire for FGDs with farmers

1. Where and how do you receive information about the scheme? Where do you go if your application is rejected?
2. Have you thought about investing in productive/fixed assets? Do you know the scheme for long term loan facility and have you availed it?
3. Have you ever considered applying for organisations like FPOs, JLGs, SHGs? Or any other such organisation? Do you have the benefits associated with it?
4. What is the size of your landholding? What methods do you use for farming?
5. As a small producer with limited resources, do you settle with the price you get at the local mandi or do you try to go to different places? What problems do you face in selling your produce?
6. What are the major concerns in storage of farm produce? How are the storage facilities in your district? Are you aware of the facility, how frequently do you use it?
7. As the small Land size is one of the biggest concerns in agriculture, which is not easy to change, what do you think are your alternatives?
8. What are some areas where you require support from the government and in which from?
9. What is the process of joining an FPO?
10. How did you get to know about the FPO?
11. Did you apply for a loan as part of the FPO? If yes, how much loan did you get as part of the FPO?
12. What activities have you performed as part of an FPO?
Annexure V: Descriptive Analysis

1. Socio-economic and demographic profile of the sample
2. Agricultural and land information
3. Farmers’ awareness about major schemes, their features and benefits
   3.1. Credit
   3.2. Crop Insurance
   3.3. Storage
   3.4. Marketing
   3.5. Farmer Producer Organisations (FPOs)
   3.6. Contract farming
4. Agricultural Practices
   4.1. Credit
   4.2. Crop Insurance
   4.3. Storage
   4.4. Marketing
5. Suitability of existing schemes according to farmers’ requirement
   5.1. Credit
   5.2. Crop Insurance
   5.3. Storage
   5.4. Marketing
6. Challenges faced by farmers
   6.1. Issues in availing credit
   6.2. Concerns in approaching bank credit
   6.3. Difficulties in uptake of crop insurance
   6.4. Issues in storage
   6.5. Issues related to marketing
7. Felt Needs and Opinion
   7.1. Improving access to credit
   7.2. Availment of crop insurance scheme
   7.3. Challenges and support required in sale of produce
   7.4. Role of intermediaries
   7.5. Perception towards online trading
   7.6. Enhancing income through farming

A questionnaire comprising 93 questions was circulated to better understand farmers’ lifestyle, needs, and challenges and their awareness of and accessibility to government services and schemes and to what extent they avail their benefits. The data collection was done with different types of farmers while keeping a representative sample of marginalised and women farmers. The sample consisted of 1583 farmers across five states in India, namely, Andhra Pradesh, Assam, Maharashtra, Rajasthan and Uttar Pradesh.

This chapter attempts to understand the demographics of the sample of farmers, the major issues they face, awareness of different schemes and its benefits, different agriculture practices, and their feedback on their situation and areas where they require support from the government.
5.1 Socio-Economic and demographic profile of the sample

The study ensured a representative sample of marginalized groups (SC/ST) and female farmers for comprehensive understanding of the diverging interests of farmers. The sample for the study was selected from Maharashtra, Uttar Pradesh, Rajasthan, Andhra Pradesh, and Assam. In Maharashtra, the sample consisted of 28% SC/ST farmers, 9% female farmers, and the remaining 63% of the sample belonged to the general category. Similarly, in Uttar Pradesh, the sample included 19% marginalized farmers, 8% female farmers, and 74% other/general category farmers. In Assam, 13% of the sample farmers were from the SC/ST category, 19% female, and 68% belonged to the general category.

Table 5.1. 1 Socio-economic and demographic information of sample farmers

<table>
<thead>
<tr>
<th>States</th>
<th>Districts</th>
<th>Sample size</th>
<th>Average age</th>
<th>SC/ST farmers</th>
<th>Female farmers</th>
<th>No education</th>
<th>Up to intermediate</th>
<th>Graduate and above</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assam</td>
<td>Dhemaji</td>
<td>165</td>
<td>45</td>
<td>15%</td>
<td>22%</td>
<td>4%</td>
<td>87%</td>
<td>9%</td>
</tr>
<tr>
<td></td>
<td>Baksav</td>
<td>154</td>
<td>45</td>
<td>10%</td>
<td>15%</td>
<td>10%</td>
<td>86%</td>
<td>5%</td>
</tr>
<tr>
<td>Andhra Pradesh</td>
<td>Anantapur</td>
<td>151</td>
<td>43</td>
<td>11%</td>
<td>8%</td>
<td>23%</td>
<td>74%</td>
<td>3%</td>
</tr>
<tr>
<td></td>
<td>Krishna</td>
<td>154</td>
<td>44</td>
<td>13%</td>
<td>11%</td>
<td>49%</td>
<td>51%</td>
<td>1%</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>Nagpur</td>
<td>157</td>
<td>47</td>
<td>53%</td>
<td>10%</td>
<td>1%</td>
<td>90%</td>
<td>9%</td>
</tr>
<tr>
<td></td>
<td>Solapur</td>
<td>168</td>
<td>35</td>
<td>2%</td>
<td>8%</td>
<td>23%</td>
<td>70%</td>
<td>7%</td>
</tr>
<tr>
<td>Rajasthan</td>
<td>Pali</td>
<td>158</td>
<td>51</td>
<td>11%</td>
<td>6%</td>
<td>13%</td>
<td>82%</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>Churu</td>
<td>164</td>
<td>47</td>
<td>10%</td>
<td>6%</td>
<td>7%</td>
<td>82%</td>
<td>11%</td>
</tr>
<tr>
<td>Uttar Pradesh</td>
<td>Meerut</td>
<td>161</td>
<td>49</td>
<td>30%</td>
<td>7%</td>
<td>5%</td>
<td>82%</td>
<td>13%</td>
</tr>
<tr>
<td></td>
<td>Kaushambi</td>
<td>151</td>
<td>47</td>
<td>7%</td>
<td>18%</td>
<td>28%</td>
<td>69%</td>
<td>3%</td>
</tr>
</tbody>
</table>
The average age of farmers was in the range of 40 to 50 years -- with 48 in UP, 49 in Rajasthan, 45 in Assam, 44 in Andhra Pradesh, and 41 in Maharashtra. Furthermore, the educational background of the farmers was also analysed.

Across the districts, majority of the sample had at least an intermediate education, with some districts reporting up to 90% of the population having completed at least an intermediate level education. The district with the lowest level of education was Anantapur in Andhra Pradesh, where nearly half of the population had no education. The district with the highest level of education was Baksa in Assam, where only 5% of the population had a graduate or above level education.

The districts in Uttar Pradesh had a relatively high percentage of the population with graduate or post-graduate education, with Meerut having the highest percentage at 13%. In Maharashtra, about 12% of the sample farmers, especially in the district of Solapur, had not received any education, while about 8% had completed their education to graduation or higher.

Table 5.1. 2 Technological and family related information about sample farmers

<table>
<thead>
<tr>
<th>State</th>
<th>District</th>
<th>Sample size</th>
<th>Avg. family size</th>
<th>Avg. number of earning members</th>
<th>Own a smartphone</th>
<th>Internet connectivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assam</td>
<td>Dhemaji</td>
<td>165</td>
<td>5</td>
<td>2</td>
<td>53%</td>
<td>84%</td>
</tr>
<tr>
<td></td>
<td>Baksa</td>
<td>154</td>
<td>5</td>
<td>2</td>
<td>36%</td>
<td>82%</td>
</tr>
<tr>
<td>Andhra Pradesh</td>
<td>Anantapur</td>
<td>151</td>
<td>5</td>
<td>1</td>
<td>59%</td>
<td>6%</td>
</tr>
<tr>
<td></td>
<td>Krishna</td>
<td>154</td>
<td>4</td>
<td>1</td>
<td>82%</td>
<td>10%</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>Nagpur</td>
<td>157</td>
<td>5</td>
<td>2</td>
<td>50%</td>
<td>97%</td>
</tr>
<tr>
<td></td>
<td>Solapur</td>
<td>168</td>
<td>9</td>
<td>4</td>
<td>99%</td>
<td>100%</td>
</tr>
<tr>
<td>Rajasthan</td>
<td>Pali</td>
<td>158</td>
<td>7</td>
<td>1</td>
<td>58%</td>
<td>13%</td>
</tr>
<tr>
<td></td>
<td>Churu</td>
<td>164</td>
<td>7</td>
<td>2</td>
<td>76%</td>
<td>40%</td>
</tr>
<tr>
<td>Uttar Pradesh</td>
<td>Meerut</td>
<td>161</td>
<td>7</td>
<td>2</td>
<td>38%</td>
<td>37%</td>
</tr>
<tr>
<td></td>
<td>Kaushambi</td>
<td>151</td>
<td>7</td>
<td>1</td>
<td>65%</td>
<td>47%</td>
</tr>
</tbody>
</table>

The above table provides data on family size, its earning members, smartphone ownership, and internet connectivity in selected districts across five Indian states.

- Maharashtra, Rajasthan and Uttar Pradesh have relatively larger families with an average size of 7 compared to Assam and Andhra Pradesh with an average size of 5. Solapur district in Maharashtra has the highest average family size of 9.

- Smartphone ownership is highest in Solapur with 99% of families owning one, while the lowest is in Baksa, Assam with only 36% ownership.

- Internet connectivity is highest in Solapur with 100% of families having access, while Anantapur district in Andhra Pradesh has the lowest connectivity with only 6% of families having access.

- The average number of earning members is highest in Solapur with 4 per family, while Anantapur has only one earning member per family.

Overall, the data highlights disparities in technology adoption and connectivity across different districts within the same state, as well as across different states.
5.2 Agricultural and land information

The graph provides information on the type of land ownership and its usage. Majority of the farmers own and farm their land in all districts. Shared ownership of land is more prevalent in Baksa district in Assam, with 12% of farmers sharing ownership of their land. Leased land or tenancy is highest in Anantapur district in Andhra Pradesh, with 57% of farmers using leased land. In Nagpur district in Maharashtra, 4% of farmers own and lease out their land, while in Pali district in Rajasthan, 7% of farmers own and lease out their land. Only a small percentage of farmers do not farm their land, ranging from 0% to 1% across districts. Overall, the data suggests that land ownership and usage vary across districts, with different levels of ownership, tenancy, and leasing. These differences may have implications for agricultural productivity, access to credit and financing, and socio-economic outcomes for farmers.

Table 5.2. 1 Average size of land and average monthly household income

<table>
<thead>
<tr>
<th>States</th>
<th>Districts</th>
<th>Sample size</th>
<th>Average land size</th>
<th>Monthly Household Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assam</td>
<td>Dhemaji</td>
<td>165</td>
<td>1.8</td>
<td>15,142</td>
</tr>
<tr>
<td></td>
<td>Baksa</td>
<td>154</td>
<td>1.5</td>
<td>16,721</td>
</tr>
<tr>
<td>Andhra Pradesh</td>
<td>Krishna</td>
<td>151</td>
<td>3.9</td>
<td>20,313</td>
</tr>
<tr>
<td></td>
<td>Anantapur</td>
<td>154</td>
<td>2.3</td>
<td>22,746</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>Nagpur</td>
<td>157</td>
<td>4.3</td>
<td>37,697</td>
</tr>
<tr>
<td></td>
<td>Solapur</td>
<td>168</td>
<td>4.5</td>
<td>37,674</td>
</tr>
<tr>
<td>Rajasthan</td>
<td>Pali</td>
<td>158</td>
<td>3.7</td>
<td>15,677</td>
</tr>
<tr>
<td></td>
<td>Churu</td>
<td>164</td>
<td>2.8</td>
<td>24,372</td>
</tr>
<tr>
<td>Uttar Pradesh</td>
<td>Meerut</td>
<td>161</td>
<td>3.9</td>
<td>1,03,764</td>
</tr>
<tr>
<td></td>
<td>Kaushambi</td>
<td>151</td>
<td>1.8</td>
<td>6,646</td>
</tr>
</tbody>
</table>
The average size of agricultural land varied across the sample. Classifying the sample into small, marginal, semi-medium and large farmers, around 86% of sample farmers comprised of land size below 2 hectares and the remaining sample farmers had the land size from 4 hectares and above.

The graph presented above illustrates a recurring trend, where an increase in land size is generally followed by an increase in income. Meerut, with an average land size of 3.9 acres, has the highest monthly household income at Rs. 1,03,764, despite having a smaller land size than Nagpur. In comparison, Kaushambi, with an average land size of 1.8 acres, exhibits an average monthly household income of only Rs. 6,646, less than half of Meerut’s income. This discrepancy cannot be solely attributed to land size differences, as there are other factors such as awareness of government schemes, proximity to major markets, crop productivity, and input quality. However, interestingly, the general trend of larger land size resulting in higher income is not consistent in Andhra Pradesh and Rajasthan.

![Figure 5.2. Average land size and monthly household income of the sample district-wise](image)

For instance, while Krishna has an average land size of 3.9 acres and an income of Rs. 20,313, Anantapur has an average monthly household income of Rs. 22,746, despite having a smaller land size of 2.3 acres. Similarly, Pali has an average land size of 3.7 acres and an income of Rs. 15,677, whereas Churu has an average land size of 2.8 acres and an income of Rs. 24,372.

According to the objectives of the study, following are some of the major themes of analysis:

5.3 Awareness about major schemes, their features and benefits amongst the farmers

The major sources of information regarding the schemes were the banks, gram sabha and the local community.
Governments at different levels provide support to farmers through schemes and policies related to credit, insurance, storage, and sale of produce. Awareness and knowledge about these schemes among farmers vary. The credit schemes are the more well-known ones. However, the knowledge of the benefits of these schemes is generally low. Information asymmetry among farmers regarding these schemes leads to a trust deficit. Bridging this gap through awareness campaigns, farmer education programs, and technology dissemination is crucial for better implementation of these schemes. The study aimed to assess the farmers’ awareness about major agricultural schemes related to credit, insurance, and subsidies for storing and selling their produce.

5.3.1 Credit

The sample included 1583 farmers across sample districts in India, and the results showed that 58% of the sample farmers were aware of government credit schemes. The highest level of awareness about credit scheme was observed in Andhra Pradesh (86%) and the lowest in Maharashtra (27%).

![Figure 5.3. 1 Awareness about credit schemes](image)

Disparities in awareness were observed among districts in Uttar Pradesh and Maharashtra, with higher awareness levels in Meerut and Nagpur, respectively. The findings of the study highlight the need for improving the dissemination of information about agricultural schemes and their benefits to farmers, particularly in districts with low awareness levels.
5.3.2 Crop Insurance

Crop loss is a major concern for farmers, as it can result in significant financial losses. In order to address this issue, the government has implemented several crop insurance schemes, including the Pradhan Mantri Fasal Bima Yojana (PMFBY) and Weather Index Based Crop Insurance Scheme (WBCIS). However, in order for farmers to fully utilize these schemes and protect themselves against crop loss, it is important that they are aware of the various features and benefits of the schemes, as well as the methods used to determine crop losses and compensation and involvement of private insurance companies.

![Awareness about Crop Insurance](image)

**Figure 5.3. 2 Awareness about crop insurance**

The study found that only about 50% of the sample farmers were aware of crop insurance schemes. The awareness was highest in Andhra Pradesh and Rajasthan, with 83% and 66% of the farmers, respectively, being aware of crop insurance. On the other hand, the awareness level was lowest in Maharashtra, with only 22% of the farmers being aware of crop insurance; while UP and Assam had awareness levels of 25% and 55%, respectively.

Furthermore, significant differences in awareness levels were observed between the sample districts within each state. For example, in Maharashtra, 43% of the farmers in Nagpur were aware of crop insurance, while in Solapur only 2% were aware of the same. Similarly, in Uttar Pradesh, 45% of the farmers in Meerut were aware of crop insurance, while only 5% in Kaushambi were aware of the same. In Assam, 72% of the farmers in Dhemaji were aware of crop insurance, while only 38% of the farmers in Baksa were aware of the same.
The results of the study demonstrate the need for increased awareness among farmers regarding crop insurance schemes. Efforts should be made to ensure that information about the features and benefits of the schemes is disseminated effectively to farmers across all districts.

Table 5.3. 1 Awareness of the complete procedure of crop insurance under the scheme

<table>
<thead>
<tr>
<th>States</th>
<th>Assam</th>
<th>Andhra Pradesh</th>
<th>Maharashtra</th>
<th>Rajasthan</th>
<th>Uttar Pradesh</th>
</tr>
</thead>
<tbody>
<tr>
<td>District</td>
<td>Dhemaji</td>
<td>Baksa</td>
<td>Anantapur</td>
<td>Krishna</td>
<td>Nagpur</td>
</tr>
<tr>
<td>Sample size</td>
<td>165</td>
<td>154</td>
<td>151</td>
<td>154</td>
<td>157</td>
</tr>
<tr>
<td>Fully aware</td>
<td>25%</td>
<td>45%</td>
<td>7%</td>
<td>3%</td>
<td>26%</td>
</tr>
<tr>
<td>Partially aware</td>
<td>63%</td>
<td>45%</td>
<td>76%</td>
<td>58%</td>
<td>26%</td>
</tr>
<tr>
<td>Not Aware</td>
<td>13%</td>
<td>9%</td>
<td>18%</td>
<td>40%</td>
<td>48%</td>
</tr>
</tbody>
</table>

Figure 5.3. 3 Overall level of awareness about the procedure of crop insurance

The study also assessed the level of knowledge amongst the farmers regarding the procedure of applying for the PMFBY scheme. Across all states, a significant proportion of farmers were only partially aware or not aware at all of the procedure. In Rajasthan, Uttar Pradesh, and Assam, 11% to 36% of farmers were not aware of the procedure at all, while in Andhra Pradesh and Maharashtra, the proportion of farmers not aware of the procedure was 29% and 26%, respectively. The highest proportion of farmers who were fully aware of the procedure were in Uttar Pradesh (50%), followed by Rajasthan (26%), Maharashtra (19%), Assam (35%), and Andhra Pradesh (5%). These findings suggest the need for targeted efforts to improve farmers' knowledge and understanding of the application procedure for the PMFBY scheme.

Table 5.3. 2 Awareness about extent of crops covered under the scheme

<table>
<thead>
<tr>
<th>States</th>
<th>Assam</th>
<th>Andhra Pradesh</th>
<th>Maharashtra</th>
<th>Rajasthan</th>
<th>Uttar Pradesh</th>
</tr>
</thead>
<tbody>
<tr>
<td>District</td>
<td>Dhemaji</td>
<td>Baksa</td>
<td>Anantapur</td>
<td>Krishna</td>
<td>Nagpur</td>
</tr>
<tr>
<td>Sample size</td>
<td>165</td>
<td>154</td>
<td>151</td>
<td>154</td>
<td>157</td>
</tr>
<tr>
<td>Fully aware</td>
<td>5%</td>
<td>8%</td>
<td>7%</td>
<td>3%</td>
<td>9%</td>
</tr>
<tr>
<td>Partially aware</td>
<td>36%</td>
<td>23%</td>
<td>49%</td>
<td>40%</td>
<td>25%</td>
</tr>
<tr>
<td>Not Aware</td>
<td>58%</td>
<td>69%</td>
<td>44%</td>
<td>57%</td>
<td>66%</td>
</tr>
</tbody>
</table>
Farmers’ awareness of the crops covered by insurance is crucial for them to make informed decisions regarding the crops they choose to grow. The findings suggest a significant lack of knowledge amongst farmers across the states regarding the extent of crops covered by insurance. In Assam, 64% of farmers were not aware at all, while in Andhra Pradesh and Maharashtra, 50% and 34% respectively were not aware of the crops covered by insurance. In Rajasthan and Uttar Pradesh, 66% and 69% respectively were also not aware. Only a small percentage of farmers in each state were fully aware of the extent of crops covered by insurance, ranging from 5% in Andhra Pradesh to 14% in Uttar Pradesh.

<table>
<thead>
<tr>
<th>States</th>
<th>Assam</th>
<th>Andhra Pradesh</th>
<th>Maharashtra</th>
<th>Rajasthan</th>
<th>Uttar Pradesh</th>
</tr>
</thead>
<tbody>
<tr>
<td>District</td>
<td>Dhemaji</td>
<td>Baksa</td>
<td>Anantapur</td>
<td>Krishna</td>
<td>Nagpur</td>
</tr>
<tr>
<td>Sample size</td>
<td>165</td>
<td>154</td>
<td>151</td>
<td>154</td>
<td>157</td>
</tr>
<tr>
<td>Fully aware</td>
<td>5%</td>
<td>5%</td>
<td>1%</td>
<td>4%</td>
<td>11%</td>
</tr>
<tr>
<td>Partially aware</td>
<td>26%</td>
<td>22%</td>
<td>57%</td>
<td>40%</td>
<td>15%</td>
</tr>
<tr>
<td>Not Aware</td>
<td>68%</td>
<td>73%</td>
<td>42%</td>
<td>56%</td>
<td>73%</td>
</tr>
</tbody>
</table>

Overall level of awareness about the premium that needs to be paid for crop insurance

**Figure 5.3. 4 Overall level of awareness about the extent of crop covered by crop insurance**

**Figure 5.3. 5 Overall level of awareness about the premium that needs to be paid for crop insurance**
Knowledge of the associated premium with crop insurance is important for farmers to make informed decisions regarding crop selection. In the survey, the percentage of sample farmers who are fully aware of the premium rates varies by state, with the lowest percentage in Andhra Pradesh (2%) and the highest in Rajasthan (15%). Partial awareness of premium rates ranges from 21% in Rajasthan to 54% in Maharashtra, while the majority of farmers in all states are not aware of premium rates. The lack of awareness in states like Assam and Uttar suggests the lack of popularity of schemes in those states. Further efforts need to be made to promote the schemes in those states for a better coverage.

### 5.3.3 Storage

Effective storage and marketing of produce is vital for farmers to achieve better prices for their crops. In this regard, the government of India has introduced several schemes to facilitate storage and marketing for farmers. However, the level of awareness among farmers regarding these schemes was found to be very low.

![Figure 5.3. 6 Awareness about storage schemes](image_url)

Figure 5.3. 6 Awareness about storage schemes

Awareness among farmers regarding government schemes for storage of produce is crucial for their success. However, the survey of sample farmers showed low levels of awareness about
these schemes. In Assam and Andhra Pradesh, a relatively higher proportion of sample farmers were found to be aware of storage schemes compared to other states. Specifically, 53% of the farmers in Assam and 71% of the farmers in Andhra Pradesh were aware of these schemes. Discrepancies within the state also exist. For example, in Maharashtra, only 25% of the farmers in Nagpur were aware of these schemes, while none of the farmers in Solapur had any awareness. Moreover, in Uttar Pradesh, Rajasthan, and Maharashtra, only 8%, 5%, and 12% of sample farmers, respectively, had knowledge of storage schemes. In contrast, a vast majority of sample farmers in these states, 95% in Uttar Pradesh, 93% in Rajasthan, and 88% in Maharashtra, were not aware of these schemes. These findings highlight the need for improving awareness among farmers about government initiatives for storage of their produce.

The Government of India has introduced several flagship initiatives for farmers. Negotiable Warehouse Receipts (NWR) is one such initiative that facilitates better storage and marketing practices. The success of these initiatives depends largely on the level of awareness and adoption among farmers. NWR is a useful document at their disposal that farmers can use to obtain credit from banks against the value of their stored agricultural produce.

Figure 5.3. 7 Awareness about e-NWR
The pie chart below shows the usage of e-NWR among sample farmers who were aware about it.

![Pie Chart]

Figure 5.3. 8 Usage of e-NWR among sample farmers who are aware of e-NWR

The level of awareness among farmers regarding these initiatives is low. Only about 4% of the complete sample was aware of NWR, and among them, a higher percentage of farmers in Uttar Pradesh knew about it compared to other states. As can be seen from chart above, only 37% of total sample farmers were aware about and used NWR. Only around 20% of sample farmers in Uttar Pradesh who were aware of it availed its benefits. Thus, creating awareness and encouraging farmers to avail these initiatives can lead to a more efficient and modernized marketing system.

5.3.4 Marketing

![Bar Chart]

Figure 5.3. 9 Awareness about marketing schemes
The awareness levels amongst the farmers with respect to marketing schemes varied across different states in India. The study found that the awareness about marketing schemes was higher in Assam and Andhra Pradesh, with around 33% and 36% of the farmers being aware of such schemes, respectively. However, the level of awareness was considerably low in other states. In Meerut, Uttar Pradesh, only 6% of the sample farmers were aware of marketing schemes, while in Kaushambi district, there was no awareness about any marketing schemes. Similarly, in Rajasthan, only 7% of sample farmers were aware of such schemes, while 93% were not aware of any marketing schemes. The situation was the same in Maharashtra, where only 8% of the farmers in Nagpur were aware of marketing schemes, whereas none of the farmers in Solapur were aware of such schemes.

Other flagship initiatives, such as the e-NAM (Electronic National Agriculture Market) has been introduced to integrate technology like digitisation in the marketing system. Just as the case of NWR, the success of this initiative depends largely on the level of awareness and adoption. The scheme of e-NAM comprises of an online trading platform for agricultural commodities that aims to create a unified national market for agricultural products. The platform enables farmers to sell their produce at a better price and helps them to discover market prices across different regions.

<table>
<thead>
<tr>
<th>Location</th>
<th>Awareness about e-NAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kaushambi</td>
<td>100%</td>
</tr>
<tr>
<td>Meerut</td>
<td>100%</td>
</tr>
<tr>
<td>Churu</td>
<td>100%</td>
</tr>
<tr>
<td>Pali</td>
<td>100%</td>
</tr>
<tr>
<td>Solapur</td>
<td>100%</td>
</tr>
<tr>
<td>Nagpur</td>
<td>100%</td>
</tr>
<tr>
<td>Krishna</td>
<td>100%</td>
</tr>
<tr>
<td>Anantapur</td>
<td>100%</td>
</tr>
<tr>
<td>Baksa</td>
<td>100%</td>
</tr>
<tr>
<td>Dhemaji</td>
<td>100%</td>
</tr>
</tbody>
</table>

Figure 5.3. 10 Awareness about e-NAM

Awareness of the e-NAM scheme was also relatively low. The highest level of awareness was observed in Assam, with 13% of the sample farmers being aware of the scheme, followed by 6% in Maharashtra and 4% in Uttar Pradesh. In contrast, only 2% of sample farmers in Andhra Pradesh and 1% of sample farmers in Rajasthan had heard about the e-NAM scheme. The low level of awareness of e-NAM is a cause of concern as it is an initiative aimed at transforming agricultural marketing. Here again, the government needs to take proactive measures to increase
awareness among farmers about the scheme and its benefits to ensure their participation in the scheme.

### 5.3.5 Farmer Producer Organisations (FPOs)

The concept of Farmer Producer Organisations (FPOs) has been introduced to address the issues faced by small producers and provide them with access to output markets. However, the awareness about FPOs amongst the farmers has been observed to be very low. Maximum awareness was found amongst farmers in Assam (49%) and Andhra Pradesh (43%), while Kaushambi in Uttar Pradesh, reported zero awareness about FPOs.

These results suggest that there is a considerable variation in the awareness levels regarding FPOs across different regions in the country. It is worth noting that the formation of FPOs is a promising initiative to bring farmers together and capitalise on collective efforts to address structural issues faced by small producers.

Additionally, this study reveals that even though the level of awareness about Farmer Producer Organisations (FPOs) is average among the farmers, the association with FPOs among farmers is minimal. Only 27% of the overall sample farmers were aware of FPOs, and out of that, only a small percentage of farmers were associated with FPOs.

**Figure 5.3. 11 Awareness about Farmer Producer Organisations**

When the farmers associated with FPOs were asked about the advantages of joining an FPO, security was found to be the major reason. Farmers felt that joining an FPO provided them with...
a sense of security. Other reasons that were mentioned include help in selling their produce as well as its marketing.

Creating awareness about FPOs and their benefits among the farmers could encourage more farmers to join these organisations and capitalise on the collective efforts and linkages to output markets that FPOs provide. Furthermore, it could help address the structural issues faced by small producers and improve their bargaining power in the market.

5.3.6 Contract farming

Contract farming is seen as an effective means of generating supplies for processing industries and exporters, with a substantial potential of adding value to agriculture. It covers loose buying arrangements, simple purchase agreements, supervised production with input provision, with possibly tied loans / advance and risk coverage, and managed production with input provision and tied loans / advance. Contract agreements range from oral deals to formal, registered written contracts.

Contract farming helps when markets do not exist or are under-developed; conversely, contracts diminish in importance with development of competitive markets. Contract farming works when specific quality requirements must be met. Contracts are effective when there is no zero-sum game (one party's gain at the expense of the other). They are ideal for a win-win situation, since they represent a natural mutual dependency (DEAR, NABARD 2005).

Apart from FPOs, contract farming is another way for the farmers to get support in buying inputs and security for selling their produce. Contract farming involves agricultural production being carried out on the basis of an agreement between the buyer and farmers. This kind of farming provides the farmers with a form of assured fixed income and financial security.

The study found varying levels of awareness about contract farming among the sample farmers across different states. The highest level of awareness was observed in Andhra Pradesh, with 99% of the sample farmers being aware of contract farming. However, only 3% of the sample farmers in Rajasthan and 10% in Solapur were aware of contract farming. The percentage of farmers involved in contract farming also varied across states, with the highest percentage in Andhra Pradesh and the lowest in Rajasthan. In Andhra Pradesh, 100% of the farmers involved in contract farming found it easy, but also reported facing issues. The study found that 91% of sample farmers in Anantapur were happy with contract farming, while only 4% in Krishna reported satisfaction.

The study findings highlight the importance of creating awareness about storage and marketing schemes among farmers. While credit schemes have gained significant attention, crop insurance schemes need to be communicated better to farmers. Furthermore, the data suggests that there is a significant scope for improvement in creating awareness and utilization of storage and marketing schemes. It is imperative to note that awareness alone is not sufficient, and the flexibility of processes and benefits of the schemes must be communicated effectively to incentivize farmers to utilize them.

Therefore, there is a need for policymakers and stakeholders to focus on not only creating awareness but also improving access and ease of utilization of these schemes. This could potentially lead to higher farmer participation and better outcomes for the agricultural sector.
5.4 Agricultural Practices

Understanding the lifestyle of farmers is an important aspect in studying the issues and challenges faced by them. It provides insights into their daily routines, socio-economic status, and cultural values, which can have a significant impact on their agricultural practices and decision-making processes. The lifestyle of farmers can be influenced by various factors such as the region they belong to, the size of their land holdings, their education level, and their access to basic amenities. In this study, the lifestyle of farmers was analyzed through various parameters.

5.4.1 Credit

This section of the study highlights the uptake of credit by farmers in different sample districts. While a majority of the sample farmers (58%) reported awareness of credit schemes, only 28% of the total sample farmers have taken credit for farming.

The states of Andhra Pradesh and Rajasthan exhibited the highest uptake of credit for agriculture, with 55% and 47% of the farmers having availed credit. In contrast, the states of Assam and Maharashtra demonstrated minimal uptake of credit for agriculture, with only 4% and 13% of the farmers having taken credit.
Further analysis revealed that the low uptake of credit in Solapur can be attributed to lack of resources, including information, time, land-size, and help from bank officials. Despite low uptake of short-term credit, farmers in Solapur are willing to take long-term credit or fixed investment credit for purchasing fixed assets like tractors, pumps, and storage and processing units.

The average amount of credit availed by farmers in Maharashtra was found to be the highest, with an average loan amount of Rs 2.46 lakhs. In comparison, the average loan amount in Assam, the state with the lowest uptake of credit, was found to be only Rs. 34,043. This disparity in loan amount could potentially explain the low uptake of credit for agriculture among farmers in Assam. Overall, the findings of this section suggest that while there is awareness about credit schemes among farmers, the uptake of credit for farming is relatively low in some states, indicating a need for targeted interventions to increase access to credit for small farmers.

The graph, it can be observed that the average amount of loan received varies greatly across different districts, highest average being in Solapur, Maharashtra, at Rs. 3,77,000, which is more than 15 times than the lowest average loan amount in Dhemaji, Assam at Rs. 24,286.
There is no clear trend that can be observed between the average amount of loan received and the average land size of borrowers. For example, Solapur in Maharashtra has both the highest average loan amount and average land size, but Pali in Rajasthan has a higher average loan amount than Churu, despite having a lower average land size. This suggests that there are other factors beyond land size that could influence the amount of loan that borrowers receive, such as their credit history and the lending policies of financial institutions.

Table 5.4. 1 Membership of farmers organisations among the sample farmers

<table>
<thead>
<tr>
<th>States</th>
<th>District</th>
<th>Sample size</th>
<th>Are a member of farmer organisation</th>
<th>Not a member of farmer organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assam</td>
<td>Dhemaji</td>
<td>165</td>
<td>10%</td>
<td>90%</td>
</tr>
<tr>
<td></td>
<td>Baksa</td>
<td>154</td>
<td>10%</td>
<td>90%</td>
</tr>
<tr>
<td>Andhra Pradesh</td>
<td>Anantapur</td>
<td>151</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>Krishna</td>
<td>154</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>Nagpur</td>
<td>157</td>
<td>1%</td>
<td>99%</td>
</tr>
<tr>
<td></td>
<td>Solapur</td>
<td>168</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>Rajasthan</td>
<td>Pali</td>
<td>158</td>
<td>2%</td>
<td>98%</td>
</tr>
<tr>
<td></td>
<td>Churu</td>
<td>164</td>
<td>2%</td>
<td>98%</td>
</tr>
<tr>
<td>Uttar Pradesh</td>
<td>Meerut</td>
<td>161</td>
<td>1%</td>
<td>99%</td>
</tr>
<tr>
<td></td>
<td>Kaushambi</td>
<td>151</td>
<td>0%</td>
<td>100%</td>
</tr>
</tbody>
</table>

The results indicate that a significant proportion of farmers believe that membership in a collective organisation would make it easier for them to access credit. However, the actual membership rates are much lower, with only 3% of the total farmers indicating that they are a member of any farmer organisation. It is worth noting that none of the sample farmers in Andhra Pradesh reported being a member of any such organisation, while the highest percentage of farmers who reported being members were from Assam, at 10%.

These findings suggest that there is a need for greater promotion and awareness building efforts around the benefits of collective organisations for farmers, particularly in areas where membership rates are low. Improving access to credit is just one of the potential benefits that such organisations can offer. Efforts to increase membership rates could help to address other issues faced by small-scale farmers, such as market access, input provision, and knowledge-sharing.

5.4.2 Crop Insurance

![Availment of crop insurance](image-url)
The data highlights the varying levels of uptake of crop insurance across sample districts. The highest percentage of sample farmers availing crop insurance was found in Andhra Pradesh and Rajasthan, while the lowest percentage was found in Uttar Pradesh. In terms of the overall sample, 26% of farmers reported availing crop insurance. The highest proportion of farmers availing crop insurance was observed in Andhra Pradesh (54%) followed by Rajasthan (52%). Uttar Pradesh had the lowest proportion at only 2%.

The high percentage in Andhra Pradesh and Rajasthan may be attributed to the high awareness levels of farmers about crop insurance schemes in these states, with 83% and 66%, respectively, reporting awareness about crop insurance schemes. Almost 99% of sample farmers in Andhra Pradesh are engaged in contract farming. This could be one of the reasons for higher uptake of crop insurance as these contracts make it compulsory for farmers to avail the facility.

It is worth noting that crop insurance can provide a safety net for farmers in times of crop failure due to various reasons such as natural disasters, pest attacks, or disease outbreaks. The low uptake of crop insurance in some states may indicate a need for targeted policy interventions and increased awareness to encourage farmers to avail these schemes.

Table 5.4. 2 Frequency of taking crop insurance

<table>
<thead>
<tr>
<th>State</th>
<th>District</th>
<th>Sample size</th>
<th>Always</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assam</td>
<td>Dhemaji</td>
<td>165</td>
<td>0%</td>
<td>88%</td>
<td>13%</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>Baksra</td>
<td>154</td>
<td>0%</td>
<td>36%</td>
<td>64%</td>
<td>0%</td>
</tr>
<tr>
<td>Andhra Pradesh</td>
<td>Anantapur</td>
<td>151</td>
<td>4%</td>
<td>15%</td>
<td>78%</td>
<td>2%</td>
</tr>
<tr>
<td></td>
<td>Krishna</td>
<td>154</td>
<td>0%</td>
<td>14%</td>
<td>86%</td>
<td>0%</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>Nagpur</td>
<td>157</td>
<td>26%</td>
<td>17%</td>
<td>52%</td>
<td>4%</td>
</tr>
<tr>
<td></td>
<td>Solapur</td>
<td>168</td>
<td>35%</td>
<td>58%</td>
<td>8%</td>
<td>0%</td>
</tr>
<tr>
<td>Rajasthan</td>
<td>Pali</td>
<td>158</td>
<td>71%</td>
<td>22%</td>
<td>6%</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>Churu</td>
<td>164</td>
<td>71%</td>
<td>6%</td>
<td>19%</td>
<td>4%</td>
</tr>
<tr>
<td>Uttar Pradesh</td>
<td>Meerut</td>
<td>161</td>
<td>0%</td>
<td>0%</td>
<td>75%</td>
<td>25%</td>
</tr>
<tr>
<td></td>
<td>Kaushambi</td>
<td>151</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

The analysis of the data on crop insurance availed by farmers reveals that there is significant variation across states in terms of the proportion of farmers availing crop insurance, as well as the frequency with which they avail it.

Further analysis of the data shows that among the farmers who availed crop insurance, only 31% always received crop insurance, 26% sometimes received crop insurance, 40% rarely received crop insurance, and 4% never received crop insurance. This suggests that there is a need to promote greater awareness and uptake of crop insurance among farmers, as well as to encourage more consistent usage of this important risk management tool.

In terms of variation across states, it was found that in Andhra Pradesh, despite a relatively high proportion of farmers availing crop insurance, only 2% always received it, with the majority (82%) rarely availing it. In contrast, in Rajasthan, a majority (71%) of the farmers who received crop insurance, always avail it. In Nagpur, 52% of the farmers who received crop insurance rarely avail it, while in Solapur, 58% avail it sometimes. In Uttar Pradesh, 100% of the farmers in Kaushambi who avail crop insurance do so always, while 75% of the farmers in Meerut who have availed crop insurance avail it rarely.
Table 5.4. 3 Reasons for getting crop insurance according to the respondents

<table>
<thead>
<tr>
<th>State</th>
<th>District</th>
<th>Sample size</th>
<th>To protect against losses</th>
<th>Plantation/Horticulture</th>
<th>Made mandatory by banks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assam</td>
<td>Dhemaji</td>
<td>165</td>
<td>100%</td>
<td>0%</td>
<td>13%</td>
</tr>
<tr>
<td></td>
<td>Baksa</td>
<td>154</td>
<td>82%</td>
<td>27%</td>
<td>0%</td>
</tr>
<tr>
<td>Andhra Pradesh</td>
<td>Anantapur</td>
<td>151</td>
<td>92%</td>
<td>13%</td>
<td>24%</td>
</tr>
<tr>
<td></td>
<td>Krishna</td>
<td>154</td>
<td>100%</td>
<td>0%</td>
<td>12%</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>Nagpur</td>
<td>157</td>
<td>100%</td>
<td>9%</td>
<td>22%</td>
</tr>
<tr>
<td></td>
<td>Solapur</td>
<td>168</td>
<td>65%</td>
<td>38%</td>
<td>0%</td>
</tr>
<tr>
<td>Rajasthan</td>
<td>Pali</td>
<td>158</td>
<td>99%</td>
<td>0%</td>
<td>35%</td>
</tr>
<tr>
<td></td>
<td>Churu</td>
<td>164</td>
<td>100%</td>
<td>1%</td>
<td>6%</td>
</tr>
<tr>
<td>Uttar Pradesh</td>
<td>Meerut</td>
<td>161</td>
<td>75%</td>
<td>25%</td>
<td>25%</td>
</tr>
<tr>
<td></td>
<td>Kaushambi</td>
<td>151</td>
<td>100%</td>
<td>0%</td>
<td>25%</td>
</tr>
</tbody>
</table>

When the sample farmers were questioned about their reasons for obtaining crop insurance, 91% of the farmers who had availed of crop insurance stated their reason to do so was to safeguard themselves against potential crop loss. On the other hand, 16% of the farmers stated that they had taken crop insurance because it was mandated by the banks. This indicates that the majority of the farmers were proactive in availing crop insurance as a means of protecting themselves from potential crop loss, rather than being forced to do so by external factors.

5.4.3 Storage

The practice of storing agricultural produce to sell it later when demand is high and supply is limited is a strategy employed by farmers to fetch better prices for their produce. To investigate this strategy, the sample farmers were asked if they store their produce, and it was found that about 36% of the whole sample store their produce while the rest do not. The results also showed significant variations in the storage practices across different states.

The highest percentage of sample farmers who store their produce was found in Assam, where about 83% of the farmers store their produce. On the other hand, only 3% of the farmers in Andhra Pradesh store their produce. In Rajasthan, 47% of the farmers store their produce, followed by 22% in Uttar Pradesh, and 24% in Maharashtra. Interestingly, there was a significant divergence in the storage practices within Maharashtra and Uttar Pradesh.

In Maharashtra, the district of Nagpur had a higher percentage of sample farmers storing their produce, with about 39% of the farmers engaged in this practice. In contrast, only 8% of the sample farmers in Solapur store their produce. A similar imbalance was observed in Uttar Pradesh, where 40% of the sample farmers in Meerut store their produce, while only 4% of the sample farmers in Kaushambi store their produce.

This suggests that the storage practices of farmers vary widely based on the state and district they belong to, possibly influenced by factors such as the local demand-supply dynamics, storage facilities availability, and market opportunities.
The study also investigated the availability of space in the storage facilities utilized by the sample farmers. Results showed that only 10% of the farmers reported that the storage facilities have enough storage capacity. Among the farmers who confirmed the presence of these services, 12% reported that they are charged for the use of these facilities, while 60% reported that they are not charged. A significant variation in the annual charges of these facilities was observed across the different states and districts. For instance, none of the sample farmers in Rajasthan knew about the charges for these facilities, whereas 46% of the farmers in Meerut, Uttar Pradesh, are charged for using them.

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1 The sample farmers in Baksa(Assam), Krishna(Andhra Pradesh), Rajasthan and Kaushambi(Uttar Pradesh) either said they did not know about the charges or that storage facilities do not charge.
Further, the study found that, on average, farmers are annually charged approximately Rs. 5,819 per quintal for the use of these facilities, with the maximum annual charge reported in Solapur at Rs. 18,500 and the minimum annual charge in Dhemaji at Rs. 237. This data is based on the questions asked specifically to those farmers who were aware of the charges.

The higher annual storage charges reported in Solapur can be attributed to the fact that these sample farmers are growing vegetables and storing their produce in cold storage facilities. Among the states surveyed, 28% of the farmers in Maharashtra reported being charged for the use of these facilities, while in Uttar Pradesh, 20% of the farmers in Dhemaji and 2% of the sample farmers in Anantapur are charged for the use of these facilities. In Baksa and Krishna, none of the sample farmers are charged for the use of these facilities.

These findings highlight the need for further exploration of the pricing and provision of additional services by storage facilities. It also emphasizes the importance of understanding the regional differences in the charging and provision of services by storage facilities to support farmers in making informed decisions about storage options for their produce.

### 5.4.4 Marketing

The survey results indicate that only 20% of the farmers engage in secondary processing or value addition after harvest. This trend varied across the surveyed states, with Rajasthan having the highest percentage of sample farmers engaged in secondary processing (28%) and Andhra Pradesh having the lowest (5%). In Maharashtra, there is a notable disparity between the districts,
with 63% of the farmers in Nagpur engaging in secondary processing, while only 8% of the farmers in Solapur do so.

The data also reveals that value addition for paddy is the most common type of secondary processing, with 51% engaged in it, followed by wheat at 37%. Value addition for wheat is primarily taking place in Maharashtra and Uttar Pradesh. A smaller percentage (11%) of the sample farmers are involved in value addition for vegetables. Interestingly, the sample farmers in Dhemaji, Solapur, and Meerut are also engaged in value addition for sugarcane.

The mode of sale of agricultural produce is a critical determinant of farmers' income and their overall economic well-being. In the survey conducted, it was found that a majority of farmers (65%) are selling their produce to local markets, followed by middlemen (12%), while only 25% of the sample farmers are selling to the Agricultural Produce Marketing Committee (APMC) Mandi. The data also reveals that only two districts, Krishna and Nagpur, have a majority of farmers (90% and 92%, respectively) selling their produce in APMC Mandis. The preference for selling to local markets or middlemen instead of going to APMC mandis can be attributed to several reasons, such as better prices, reduced transaction costs, and the ability to negotiate prices. This preference has been observed also through field visits and literature review.

Furthermore, contract farming has emerged as a viable alternative for some sample farmers, with 72% of farmers in Assam, 96% of farmers in Anantapur, and 49% of farmers in Kaushambi engaged in it. The prevalence of contract farming is an emerging trend. In contrast, a significant

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2 Local Market /Wholesale markets: These markets are generally located at village level where large traders, middlemen and sometime consumers directly transact with farmer producer.

3 APMC Mandi/ APMC regulated markets implies the APMC mandi of a designated market area as per the APMC Acts of respective states.
proportion of farmers in Rajasthan (66%), Meerut (81%), and Solapur (86%) sell their produce in local markets or wholesale markets.

These findings have important implications for policy interventions aimed at enhancing the income and economic well-being of farmers. The mandi charges for sale of produce differ from Rs. 1,525 in Andhra Pradesh and Rs. 45 in Assam.

![Figure 5.4. 8 Charges levied by APMC mandis to sell the produce](image)

The Minimum Support Price (MSP) set by government for procurement of produce from farmers is a crucial factor in determining the profitability of agricultural production. In order to understand the extent of MSP coverage in the survey districts, the sample farmers were asked if they receive MSP when selling their produce. The responses indicate significant variation between states, with only 3% of the farmers in Rajasthan reporting that they receive MSP while selling their produce, while 55% of the farmers in Andhra Pradesh reported receiving MSP.

![Figure 5.4. 9 Price received at APMC mandis](image)
In terms of MSP coverage in APMC mandis, the results show that 20% of farmers in Uttar Pradesh, 28% of the farmers in Maharashtra, and 14% of the farmers in Assam reported always receiving MSP when selling in APMC mandi. These findings suggest that there are significant gaps in the implementation of MSP policies in the surveyed districts, particularly in Rajasthan where MSP coverage appears to be particularly low. Overall, 76% of total sample reported not receiving MSP while selling their produce.

It is important to note that the implementation of MSP policies is a complex issue, influenced by a range of factors such as market dynamics, government policies, and local practices. These findings demonstrate the need for further research to identify the factors that influence MSP coverage in different regions. There is also a need to develop strategies to ensure that farmers receive fair prices for their produce.

Figure 5.4. 10 Sell produce at other markets than the local mandi

The sale of agricultural produce in India is governed by the Agricultural Produce Marketing Committee (APMC) Acts of each state, which designate specific APMC mandis for a specific area as the only legal marketplaces for farmers to sell their produce. However, due to various reasons, farmers often seek alternative avenues to sell their produce.

To investigate this phenomenon, farmers was asked if they sell their produce at any other place besides the designated mandi. The results indicate that 17% of the sample farmers sold their produce at other places, while 83% did not. Notably, the highest percentage of farmers that used other avenues to sell their produce were from Assam, where about 25% of the sample farmers sold elsewhere. The district of Baksa in Assam had the highest percentage of farmers (32%) selling their produce at other places. Among the other states surveyed, 22% of the sample farmers in Maharashtra, 19% of the sample farmers in Uttar Pradesh, 14% of the sample farmers in Rajasthan, and 7% of the sample farmers in Andhra Pradesh used other avenues to sell their produce. The reasons for this trend are discussed further in the document.
Access to timely and accurate information about crop prices is critical for farmers to make informed decisions about when and where to sell their produce. The study sought to examine the different sources of information that farmers rely on to obtain crop price information. The results indicate that a significant proportion of farmers (40%) obtain crop price information from traders or middlemen. This finding suggests that these intermediaries play an influential role in farmers’ lives. In addition, about 33% of the farmers obtain price information from their local mandis, highlighting the importance of these regulated markets in providing price information to farmers.

Interestingly, about 25% of the sample farmers obtain price information from their community or neighbours, suggesting that farmers also rely on social networks to obtain price information. However, only a small percentage of farmers (1%) reported obtaining price information from FPOs or e-trading platforms, indicating that these digital platforms have yet to gain widespread adoption among farmers in the sample.

The study also found some variations across states in terms of the sources of price information. For instance, a higher percentage of farmers in Assam (72%), Anantapur (52%), and Kaushambi (60%) obtain price information from traders or middlemen. In contrast, a higher percentage of farmers in Maharashtra (66%) and Krishna (73%) obtain price information from local mandis. Additionally, a higher percentage of farmers in Rajasthan (60%) and Meerut (40%) obtain price information from their community or neighbours.

Overall, the findings suggest that traders and middlemen, local mandis, and social networks are important sources of crop price information for farmers, and that there are variations in the use of these sources across states. Further research is needed to examine the factors that influence farmers’ choice of price information sources and to identify strategies for improving access to timely and accurate price information.
5.5 Suitability of existing schemes according to farmers’ requirement

This section examines the implementation of existing schemes and their efficacy in meeting the needs of farmers. Assessing the current scheme setup can reveal areas that require improvement to better serve farmers. Such an assessment is critical for identifying gaps and ensuring that the schemes are aligned with the needs of farmers.

5.5.1 Credit

Figure 5.5. 1 Satisfaction with the loan amount received

The graph above indicates the satisfaction of farmers who availed credit. A significant proportion, approximately 40%, of the sampled farmers expressed dissatisfaction with the loan amount obtained through either Kisan Credit Card (KCC) or alternative sources of credit. This finding highlights the insufficiency of credit received by farmers, in spite of availing credit facilities for agricultural purposes. This underscores the need for a reassessment of the loan amount granted to farmers, such that they are not compelled to seek credit from non-institutional sources.

Figure 5.5. 2 Source of credit
The graph above shows the source of loan reported by farmers who availed credit. The study found that KCC scheme emerged as the most popular source of credit for agriculture in Rajasthan (87%), Uttar Pradesh (92%), Assam (83%), and parts of Maharashtra (80%), while Nagpur in Maharashtra had the a very low share of farmers using KCC for their credit needs, with merely 3%. In Andhra Pradesh, however, none of the sample farmers used KCC. Other kinds of bank loans are widely used (85%) instead of the KCC in Anantapur.

Cooperative societies were the next most popular option in Pali (27%) and Solapur (60%), while other types of bank loans were popular in Meerut (27%), Baksa (40%), and Krishna (55%). Overall, from the sample farmers who availed credit for agriculture, 37% in Rajasthan, 87% in Uttar Pradesh, 80% in Assam, 43% in Andhra Pradesh, and 57% in Maharashtra found the loan amount to be sufficient.

5.5.2 Crop Insurance

In the event of crop loss, farmers often resort to various measures to make up for their losses. The farmers were asked about the options they choose in such situations. In Rajasthan, selling livestock was the most popular option, with 54% of the farmers resorting to this measure. In Uttar Pradesh, borrowing money from friends and family was the most common measure, with 55% of the farmers opting for this option. In Assam and Andhra Pradesh, borrowing money from money lenders was the popular measure, with 24% and 33% of the farmers respectively resorting to this option. In Maharashtra, depending on government relief was the most popular measure, with 35% of the farmers opted for this option.

In terms of relying on family and friends, about 52% of the farmers in Rajasthan and Uttar Pradesh chose this option, while 30% of the farmers in Andhra Pradesh relied on government relief. About 23% of the farmers in Assam and 26% of the farmers in Maharashtra opted for a bank loan to make up for their crop loss. These findings suggest that farmers resort to a variety of measures to make up for crop losses, depending on their local context and access to different forms of support. There is no single prevalent mode.

![Insurance claim](image)

**Figure 5.5. 3 Receiving insurance claim**

The results of the survey indicate that only a small fraction of the sample farmers have previously made an insurance claim in case of crop loss, with about 90% of the total farmers having never filed for an insurance claim. Among the 10% farmers that had made a claim, around 79% received their insurance claim. This was asked to the farmers who were using insurance scheme. A high
percentage of the sample farmers in Rajasthan, Assam, Andhra Pradesh, and Maharashtra received the claim, ranging from 82% to 100%. However, in Uttar Pradesh, only about 36% of the sample farmers that have previously made an insurance claim received it, with the majority of claims being rejected. This finding suggests that the crop insurance scheme is more popular in Rajasthan than in Uttar Pradesh, as a higher proportion of claims made by farmers in Rajasthan were received. The contrasting trend in Uttar Pradesh may indicate issues with the implementation or administration of the crop insurance scheme.

![Figure 5.5. 4 Extend of insurance claim received by sample farmers who claimed under the insurance scheme](image)

Based on the survey of sample farmers, it was found that the majority of farmers who received claim payments for crop loss insurance only received partial settlements. However, there were a few districts where most farmers received full settlements. Specifically, 100% of farmers in Baksa and Kaushambi, and 73% of farmers in Solapur received full settlements. In other districts, most farmers received partial settlements. This finding suggests that the implementation and effectiveness of crop insurance schemes may vary across different districts. However, more research is needed to understand why certain districts have higher rates of full settlement than others.

### 5.5.3 Storage

![Figure 5.5. 5 Type of storage facility used](image)

The storage practices and facilities amongst farmers who used to store their produce was also examined. It was found that 36% of the sample farmers stored their produce, with the majority
being in Assam. The majority of farmers stored their produce in their own storage facilities rather than government or private setups, with 86% of the farmers in Assam and 67% of the sample farmers in Uttar Pradesh storing their produce in their own personal storage set ups. Most farmers fell under the category of small and marginal farmers, and storage units were typically small make-shift units built to store produce during the harvest period, with some farmers storing produce inside their houses.

Regarding facilities available at warehouses, the study found that most farmers reported a lack of facilities for cleaning, grading, packaging, loading and unloading goods, and space for storing. However, some farmers reported limited availability of certain facilities, such as labelling, grading, and packaging. In Uttar Pradesh, for example, about 20% of the farmers reported a platform for loading and unloading, while about 25% reported facilities for cleaning and 13% for grading. In Assam, 11% of the farmers reported a platform for loading and unloading, while 6% reported facilities for grading and labelling, and 5% for packaging.

Overall, these findings suggest that storage practices and facilities in India may be limited, particularly among small and marginal farmers. There is a need to improve storage facilities to better meet the needs of farmers, which could lead to more efficient and effective storage practices, and ultimately, better economic outcomes for farmers.

5.5.4 Marketing

Table 5.5. 1 Registration of APMC with e-NAM according to respondents

<table>
<thead>
<tr>
<th>State</th>
<th>District</th>
<th>Sample size</th>
<th>Registered with e-NAM</th>
<th>Not registered with e-NAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assam</td>
<td>Dhemaji</td>
<td>165</td>
<td>7%</td>
<td>93%</td>
</tr>
<tr>
<td></td>
<td>Baksa</td>
<td>154</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>Andhra Pradesh</td>
<td>Anantapur</td>
<td>151</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>Krishna</td>
<td>154</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>Nagpur</td>
<td>157</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>Solapur</td>
<td>168</td>
<td>78%</td>
<td>22%</td>
</tr>
<tr>
<td>Rajasthan</td>
<td>Pali</td>
<td>158</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>Churu</td>
<td>164</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>Uttar Pradesh</td>
<td>Meerut</td>
<td>161</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>Kaushambi</td>
<td>151</td>
<td>0%</td>
<td>100%</td>
</tr>
</tbody>
</table>

The study examined the adoption and satisfaction levels of e-NAM among farmers who were aware of the scheme, an e-auction platform for agricultural produce. Out of the 5% sample farmers who have heard of e-NAM, 100% of sample farmers in Anantapur, 78% in Solapur, and 7% in Dhemaji have registered on the platform. None of the farmers in any other district have registered on the platform or any other e-auction platform. Finally, majority of farmers did not know if their APMC Mandi was registered with e-NAM, with a small percentage (ranging from 1-11%) claiming that their APMC mandi was not registered with e-NAM.

5.6 Challenges faced by farmers

The accessibility of welfare schemes is a crucial criterion for evaluating their uptake, which is dependent on the ease or difficulty of the application process. In the case of farmers, challenges in meeting paperwork requirements and lengthy approval processes can hinder their access to
government-provided benefits. This section follows the challenges faced by the farmers in accessing credit for farming purposes.

### 5.6.1 Issues in availing credit

Among the sample, those from Andhra Pradesh and Rajasthan were the ones leading in availing credit for agriculture followed by Uttar Pradesh. The states of Assam, Maharashtra had a very minimal uptake of credit for agriculture. 96% of farmers of Assam, 87% of Maharashtra and 76% farmers of Uttar Pradesh did not avail credit. When asked about the reasons for not availing any forms of credit, 40% of the farmers cited not having enough awareness regarding the various credit schemes as one of the major reasons why they did not avail credit. This was followed by reasons such as not falling under the eligible criteria and not having sufficient land or security.

**Figure 5.6. 1 Reasons for not availing agri-credit**
A significant percentage of respondents in most states reported that they did not fall under the eligibility criteria for availing agricultural credit. No awareness was a significant barrier to availing credit for farmers in most states, with more than 45% of respondents in Andhra Pradesh, Dhemaji and Baksa in Assam, Nagpur and Pali in Maharashtra, and Meerut and Kaushambi in Uttar Pradesh citing this as a reason.

Lack of resources was cited by a significant percentage of respondents from some districts, such as Dhemaji and Baksa in Assam, Nagpur in Maharashtra, and Churu in Rajasthan. Legal/technical hindrances were a significant barrier to availing credit, cited by more than 10% of respondents in most states, except for Nagpur and Solapur in Maharashtra. Majority of the respondents from Assam and Uttar Pradesh reported that they were not members of any cooperative society or Joint Liability Groups (JLGs).

Having no security was a reason for less than 15% of respondents in most places, except for Nagpur and Solapur in Maharashtra, where it was cited by more than 14% of respondents. Finally, no land ownership was a significant barrier to availing credit for a significant percentage of respondents in Anantapur in Andhra Pradesh, and Nagpur, Solapur, and Pali in Maharashtra.

The survey asked farmers who availed credit about their sources of funding for their agricultural needs. The primary institutional scheme utilized for obtaining credit was the Kisan Credit Card (KCC) Scheme, followed by other bank loans (29%) and loans from cooperative societies (22%). Notably, Andhra Pradesh was the only state where a significant proportion (41%) of farmers took credit from moneylenders. Loans from friends and family members were rare, with only 4% of farmers reporting this as a source of credit.

Majority of the farmers in Churu and Kaushambi availed credit through Kisan Credit Card (KCC). However, in the districts of Anantapur and Krishna, farmers faced technical and legal obstacles in availing KCC, leading them to opt for alternative loan sources. This factor also contributed to the high proportion of farmers in Andhra Pradesh (40%) who obtained credit from moneylenders.

![Figure 5.6. 2 Reasons for opting other sources of credit than KCC scheme](image-url)
The survey asked the farmers the reasons for not choosing KCC scheme for credit. In general, the farmers in Uttar Pradesh seem to face more challenges in accessing institutional credit, with all five reasons being cited by at least one district. Meerut and Kaushambi stand out with 100% of farmers citing lack of institutional credit at affordable interest rates as a reason for not taking loans.

Maharashtra and Andhra Pradesh have a relatively high percentage of farmers citing lack of institutions providing agricultural credit as a reason, at 43% and 30%, respectively. In Maharashtra, a significant number of farmers also find the loan amount higher than agri-credit (28%).

In Andhra Pradesh, more than half of the farmers in Anantapur find the procedure for obtaining loans other than KCC scheme to be hassle-free. Meanwhile, in Rajasthan, a higher percentage of farmers in Pali and Churu face technical and legal hindrances limiting their options for agri-credit (KCC scheme).

As we can see in figure 5.6.3, when the sample farmers who took loans from sources other than KCC were asked for reasons why they opted other options than KCC, hassle free procedure emerged as the most popular option, around 29% of the farmers mentioned this as a reason. 21% of the farmers also mentioned technical and legal hinderances as another reason for not opting KCC scheme.
5.6.2 Concerns in approaching bank credit

The study found that a significant proportion of sample farmers faced various challenges showed in figure 5.6.4 while approaching banks for credit. The complexity of the procedure was identified as the major roadblock by 54% of the farmers. Additionally, 45% of the farmers cited lack of proper documents as a significant concern and 20% said distance is a challenge for them.

Figure 5.6. 4 Concerns in approaching a bank for the credit

Figure 5.6. 5 Concerns in approaching a bank for the credit district-wise
In the figure 5.6.5 above, the district-wise data is represented for the concerns of sample farmers in approaching banks. The distance of the banks from their residence was a hindrance, especially in Kaushambi and Nagpur, where farmers’ daily schedule of working on their fields prevented them from spending extended periods at the bank. Apart from these factors, the lack of support from bank officials during the application process also discouraged farmers from approaching banks. Therefore, farmers preferred alternative avenues such as cooperative societies or moneylenders to avoid the time and energy-consuming rigid scheme procedures.

5.6.3 Difficulties in uptake of crop insurance

The agricultural sector is highly susceptible to the negative impacts of extreme climate and weather risks, which can have devastating effects on farmers’ livelihoods through crop losses. The study revealed that a significant proportion of the sample farmers (58%) had suffered crop destruction in the last one or two years. To mitigate the potential impact of crop loss, farmers were recommended to opt for crop insurance schemes. However, the findings indicated that only a small fraction of farmers (26%) had availed the benefits of crop insurance.

The farmers who have availed the benefits of crop insurance were asked the problems faced while they applied for the crop insurance. Lack of prior knowledge and technical hindrances were the most frequent reasons cited by 45% and 40% of the farmers respectively. 22% cited lack of proper documents as an issue they faced.

The above figure shows the comparison between availing of crop insurance scheme and the farmers who reported that their crop was destroyed in the past one or two years. The government provides significant assistance, with 98% of the insurance premium borne by the government, and only 2% (1.5% for Rabi) to be borne by the farmers. However, even this miniscule share of the premium is significant for farmers, making it impractical for them to pay. Additionally, many
farmers have had unsatisfactory experiences with the scheme, contributing to hesitancy in availing it.

Lack of awareness about the proper process of availing crop insurance is also a contributing factor. Only 27% of the farmers surveyed were aware of the complete process of crop insurance, and only 9% knew about the premium that they were required to pay. Some farmers also feel that they do not require insurance for their crops (14%), while others are hesitant to avail it as they believe that they will not be compensated rightfully (10%). These reasons are summarized in the table below. Overall, it is clear that increasing awareness about the benefits of crop insurance and simplifying the process of availing it could help to increase its adoption among farmers.

Table 5.6. 1 Reasons for not availing crop insurance scheme according to respondents

<table>
<thead>
<tr>
<th>State</th>
<th>Assam</th>
<th>Andhra Pradesh</th>
<th>Maharashtra</th>
<th>Rajasthan</th>
<th>Uttar Pradesh</th>
</tr>
</thead>
<tbody>
<tr>
<td>District</td>
<td>Dhemaji</td>
<td>Baksa</td>
<td>Anantapur</td>
<td>Krishna</td>
<td>Nagpur</td>
</tr>
<tr>
<td>Sample Size</td>
<td>165</td>
<td>154</td>
<td>151</td>
<td>154</td>
<td>157</td>
</tr>
<tr>
<td>Shortage of money</td>
<td>23%</td>
<td>32%</td>
<td>12%</td>
<td>15%</td>
<td>16%</td>
</tr>
<tr>
<td>Insurance policies are not in favour of the farmers</td>
<td>10%</td>
<td>8%</td>
<td>22%</td>
<td>28%</td>
<td>16%</td>
</tr>
<tr>
<td>Believe that there is corruption involved</td>
<td>5%</td>
<td>8%</td>
<td>12%</td>
<td>7%</td>
<td>11%</td>
</tr>
<tr>
<td>The agency may not give your rightful compensation</td>
<td>9%</td>
<td>3%</td>
<td>22%</td>
<td>21%</td>
<td>9%</td>
</tr>
<tr>
<td>Never felt the need for insurance</td>
<td>36%</td>
<td>31%</td>
<td>7%</td>
<td>9%</td>
<td>26%</td>
</tr>
<tr>
<td>Insurance facility is not available</td>
<td>15%</td>
<td>14%</td>
<td>7%</td>
<td>5%</td>
<td>3%</td>
</tr>
<tr>
<td>Found the process to be difficult</td>
<td>1%</td>
<td>3%</td>
<td>18%</td>
<td>15%</td>
<td>5%</td>
</tr>
</tbody>
</table>

Figure 5.6. 7 Reasons for not availing crop insurance scheme
The low uptake of crop insurance among farmers can be attributed to several factors. Despite incurring significant losses due to crop destruction, the majority of farmers had not availed crop insurance. A major reason for not opting for crop insurance, as cited by 31% of the sample farmers, was the shortage of funds. Other potential reasons that deterred farmers from availing crop insurance include lack of awareness about the benefits of crop insurance, a perception that crop insurance schemes are not useful or suitable for their needs, and difficulties in navigating the complex application procedures.

There are multiple eligibility criteria for PMFBY like the list of crops covered under the scheme and the extent of compensation provided to the farmers which affects the farmers’ choice of crops. Therefore, through the survey it was asked if these factors limit the farmers in choosing the crops sown and around 31% of sample farmers were of the opinion that these criteria do limit them from growing the crop they wish to grow.

### 5.6.4 Issues in storage

**Figure 5.6. 8 Reasons for not storing produce according to respondents who do not store their produce**

Based on the findings of the survey conducted, it was observed that the practice of storing produce was not commonly followed by the majority of farmers across different states. Among the various storage facilities used by farmers, owning storage facility was found to be the most common, which was mainly small and makeshift units built to store produce during the harvest period.
The figure 5.6.8 highlights different reasons given by sample farmers for not storing their farm produce. A major reason for not storing produce was the immediate requirement of money, as reported by 37% of the farmers. Other reasons cited for not storing produce included unaffordability to use storage facilities (24%), high charges for storage (12%), and lack of storage facilities near their premises (11%).

It is noteworthy that most of the sample farmers (49%) belonged to the small and marginal category, and the lack of storage facilities and marketing infrastructure can be a significant hindrance for them. Therefore, it is crucial to focus on developing affordable and accessible storage facilities, that can help farmers to store their produce safely and securely.

50% of the farmers felt that they would be able to get better prices for their produce if they were able to store their produce for some months till the prices got better. The farmers need to be educated on the benefits of storing their produces. Many farmers sell their produce even if the prices for the produce are low at that time. If they are educated on how they can earn more income by storing their produce in a storage facility and sell them off when the prices of the commodities increase. The loss they incur due to distress selling of their produce can be minimised to a great extent by doing so. Increasing awareness is one of the many steps that should be taken by the government. As we observed in the survey that immediate sale of produce after produce is a common phenomenon among majority of farmers. There are several factors which determines if a farmer is storing their produce. Therefore, along with awareness, reform in marketing system, reducing the influence of intermediaries and improving access to credit is crucial. More than half of the farmers are willing to utilise storage facility provided affordable storage facilities are built near their premises with affordable rates.

5.6.5 Issues related to marketing.

Farmers’ major problems with marketing include the distance between mandis and a lack of transportation, which makes access to transportation expensive.

According to the results of the survey, more than half of the farmers found the mandis to be too far away, more than 40% of the farmers believe the charges for transportation are very high, and the APMC/village mandi is very far away with no access to transportation. 76% of farmers claimed they did not receive the MSP price when selling at the APMC mandis. These overall reasons given
by farmers are shown in the figure 5.6.9 above. Due to the aforementioned issues, many farmers chose to sell their produce to traders and middlemen rather than the mandi.

The district-wise variation in the problems faced by sample farmers in taking their produce to sell in mandis are shown in figure 5.6.10. The highest percentage of people who do not have access to transport facilities are in Uttar Pradesh (80%), followed by Pali district in Rajasthan (55%) and Kaushambi district in Uttar Pradesh (50%). The highest percentage of people for whom the mandi is far away in Pali district in Rajasthan (70%), followed by Dhemaji district in Assam (63%) and Anantapur district in Andhra Pradesh (52%). The data suggests that access to transport facilities is a major challenge in many districts of different states in India. This can impact their ability to participate in economic activities and access basic services. These challenges are the possible reasons that the farmers in these districts does not prefer taking their produce to the mandis.

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The data suggests that access to transport facilities is a major challenge in many districts of different states in India. This can impact their ability to participate in economic activities and access basic services. These challenges are the possible reasons that the farmers in these districts does not prefer taking their produce to the mandis.
Overall, 43% of total sample farmers claimed that they had to sell their produce at a lower price than the costs of cultivation. This data suggests that a significant proportion of farmers in each district sold their last harvest at a loss, with Rajasthan having the highest percentage (83%) followed by Maharashtra (42%). This could indicate challenges in accessing markets or getting fair prices for their produce. It may also highlight the need for better market linkages and price transparency to support smallholder farmers in getting fair value for their crops. The reasons given by respondents for the produce being sold at a lower price than the expenses incurred in cultivating the crops are listed in the table below.

Table 5.6. 2 Reasons for produce being sold at lower prices

<table>
<thead>
<tr>
<th>State</th>
<th>Assam</th>
<th>Andhra Pradesh</th>
<th>Maharashtra</th>
<th>Rajasthan</th>
<th>Uttar Pradesh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Districts</td>
<td>Dhemaji</td>
<td>Baksan</td>
<td>Anantapur</td>
<td>Krishna</td>
<td>Nagpur</td>
</tr>
<tr>
<td>Sample Size</td>
<td>165</td>
<td>154</td>
<td>151</td>
<td>154</td>
<td>157</td>
</tr>
<tr>
<td>Low quantity of produce</td>
<td>35%</td>
<td>38%</td>
<td>28%</td>
<td>37%</td>
<td>20%</td>
</tr>
<tr>
<td>High commission and taxes in mandis</td>
<td>3%</td>
<td>4%</td>
<td>33%</td>
<td>42%</td>
<td>12%</td>
</tr>
<tr>
<td>Substandard quality</td>
<td>4%</td>
<td>5%</td>
<td>21%</td>
<td>12%</td>
<td>11%</td>
</tr>
<tr>
<td>Emergency sale for urgent need of money</td>
<td>52%</td>
<td>53%</td>
<td>18%</td>
<td>10%</td>
<td>52%</td>
</tr>
</tbody>
</table>

Figure 5.6. 12 Reasons for produce being sold at lower prices
According to the findings of the survey observed in figure 5.6.12, a considerable proportion of the sample farmers, specifically 40%, were compelled to sell their produce for a lower rate to fulfil their immediate need for money. The second most frequently cited reasons for selling produce at a lower price were the low quantity of produce and the high charges levied by the mandis. Additionally, the substandard quality of produce due to climatic factors or other reasons was also mentioned by the farmers.

Interestingly, the survey also revealed that a majority of the farmers did not prefer selling their produce to markets other than their local mandis. Only 17% of the farmers reported selling their produce to other markets. Among those who did, 69% claimed that they did so due to the low prices they received in their local mandis, while 31% stated that it was due to the lack of value addition services. Other reasons included high commission fees/taxes and the absence of sufficient space.

The table 5.6.3 below outlines the reasons given by respondents for going to other market than local mandis.

**Table 5.6.3 Reasons given by respondents for going to other market than local mandis**

<table>
<thead>
<tr>
<th>States</th>
<th>Districts</th>
<th>Sample size</th>
<th>Low prices in local market</th>
<th>High commission fee/tax</th>
<th>Lack of value addition services</th>
<th>Inadequate storage facility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assam</td>
<td>Dhemaji</td>
<td>165</td>
<td>80%</td>
<td>20%</td>
<td>13%</td>
<td>27%</td>
</tr>
<tr>
<td></td>
<td>Baksra</td>
<td>154</td>
<td>69%</td>
<td>12%</td>
<td>22%</td>
<td>27%</td>
</tr>
<tr>
<td>Andhra Pradesh</td>
<td>Anantapur</td>
<td>151</td>
<td>69%</td>
<td>38%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>Krishna</td>
<td>154</td>
<td>89%</td>
<td>33%</td>
<td>11%</td>
<td>0%</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>Nagpur</td>
<td>157</td>
<td>80%</td>
<td>49%</td>
<td>37%</td>
<td>15%</td>
</tr>
<tr>
<td></td>
<td>Solapur</td>
<td>168</td>
<td>59%</td>
<td>21%</td>
<td>14%</td>
<td>10%</td>
</tr>
<tr>
<td>Rajasthan</td>
<td>Pali</td>
<td>158</td>
<td>32%</td>
<td>0%</td>
<td>100%</td>
<td>89%</td>
</tr>
<tr>
<td></td>
<td>Churu</td>
<td>164</td>
<td>56%</td>
<td>6%</td>
<td>63%</td>
<td>44%</td>
</tr>
<tr>
<td>Uttar Pradesh</td>
<td>Meerut</td>
<td>161</td>
<td>75%</td>
<td>42%</td>
<td>29%</td>
<td>13%</td>
</tr>
<tr>
<td></td>
<td>Kaushambi</td>
<td>151</td>
<td>79%</td>
<td>45%</td>
<td>21%</td>
<td>0%</td>
</tr>
</tbody>
</table>

The farmers who did venture out to other markets to sell their produce reported facing several issues such as distance from their residences, lack of transportation, and opposition from local mandis. On the other hand, those who did not go to other markets cited distance and time requirements as the primary reasons for their decision, as well as the possibility of facing opposition.

Notably, 20% of the farmers stated that they did not want to sell their produce to any markets other than their local mandis.

**5.6.6 Major issues faced by farmers**

In addition to issues discussed in the above section, the survey asked the farmers about the general issues they face in farming. These are depicted in the figure below.
The farmers’ main concern (54%) was the high input costs they had to bear for the process of cultivating their crops. These costs included high-priced seeds, the construction of an irrigation system, the use of fertilizers, and so on. Low crop prices were mentioned by 26% of the farmers. Another issue discovered was a lack of credit (13%), followed by presence of intermediaries (7%).

### Major problems faced by farmers

<table>
<thead>
<tr>
<th>Problem</th>
<th>Percentage of Farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>High expenses in inputs (seeds, fertilizers, irrigation etc.)</td>
<td>54%</td>
</tr>
<tr>
<td>Low access to credit</td>
<td>13%</td>
</tr>
<tr>
<td>Low prices on crops</td>
<td>26%</td>
</tr>
<tr>
<td>Presence of intermediaries</td>
<td>7%</td>
</tr>
<tr>
<td>Excess government control in many fields</td>
<td>1%</td>
</tr>
</tbody>
</table>

**Figure 5.6. 14 Major problems faced by farmers, district-wise**

In figure 5.6.14 above, the district-wise breakdown of the major problems reported by farmers is depicted. The highest percentage of farmers facing high expenses on inputs such as seeds,
fertilizers, and irrigation are in Dhemaji district in Assam (95%), followed by Baksa district in Assam (79%) and Solapur district in Maharashtra (78%). The highest percentage of farmers facing low access to credit are in Kaushambi district in Uttar Pradesh (9%), followed by Meerut district in Uttar Pradesh (7%) and Anantapur district in Andhra Pradesh (3%). The highest percentage of farmers facing low prices for crops are in Nagpur district in Maharashtra (59%), followed by Churu district in Rajasthan (45%) and Meerut district in Uttar Pradesh (45%).

Excess government control in many fields is not a significant challenge in most of the districts, but it is reported to some extent in a few districts such as Anantapur in Andhra Pradesh, Nagpur in Maharashtra, and Meerut in Uttar Pradesh.

Overall, the data suggests that farmers in many districts across the states face various challenges related to agriculture, including high expenses on inputs, low access to credit, low prices for crops, and the presence of intermediaries. These challenges can impact the profitability and sustainability of farming.

5.7 Felt Needs and Opinion

The previous section examined the major issues confronting farmers. It is critical to understand how the current system of input, credit, and infrastructure support can be improved through policies and programmes from the perspective of farmers. Taking into account the farmers' perceived needs and opinions is an important aspect of this research.

Several policies and schemes have had significant success over decades of efforts to provide and improve institutional access to credit for farmers. Despite this, multiple structural issues continue to impede the majority of farmers' access to institutional credit. Non-institutional sources, such as moneylenders, large farmers and traders, fill this void, and a sizable proportion of farmers rely on them.

5.7.1 Improving access to credit

![Figure 5.7. 1 Ways to improve access to credit](image-url)
The survey asked the respondents their opinion on how farmers’ access to credit for agriculture can be improved. Figure 5.7.1 highlights the improvement suggested by farmers. In order to improve farmers’ access to credit for agriculture, about two-thirds of sample farmers desired loans at lower interest rate while 66% of sample farmers wanted simple schemes procedure and 54% of respondents require higher loan amount. Many times, the amount of loan sanctioned under the scheme is not adequate for the expenses incurred by the farmers and they have to rely on other sources for credit requirements.

![Figure 5.7.1 Ways to improve access to credit](image)

**Figure 5.7.2 Ways to improve access to credit district-wise**

We can see the district-wise variation in the suggestions made by the sample farmers in figure 5.7.2. In terms of simplifying the existing scheme procedure, majority of the respondents from all states except for Maharashtra (34%) wanted this aspect improved, with the highest percentage from Rajasthan (88%), followed by Uttar Pradesh (93%).

With regard to low-interest rates, the majority of respondents from all states except for Andhra Pradesh (47%) and Maharashtra (81%) wanted this aspect improved, with the highest percentage from Uttar Pradesh (93%). In terms of higher loan amounts, a majority of respondents from all states except for Assam (24%) and Maharashtra (33%) wanted this aspect improved, with the highest percentage from Uttar Pradesh (85%).

Regarding improved access to credit infrastructure, only respondents from Pali (65%) and Churu (43%) in Rajasthan, and Nagpur (20%) and Solapur (10%) in Maharashtra expressed their desire to see improvements in this area.
5.7.2 Availment of crop insurance scheme

The present study highlights that the adoption of the Pradhan Mantri Fasal Bima Yojana (PMFBY) scheme by the farmers is far from satisfactory. The majority of the respondents expressed their discontent with the scheme, citing various reasons such as inadequate compensation, declining demand for insurance, and unfavourable insurance policies. However, it is noteworthy that 68% of the sample farmers who were not availing the scheme expressed their willingness to apply for crop insurance in the future, suggesting the need for crop insurance among farmers (figure 5.7.3).

Moreover, the study reveals that a significant percentage of farmers have experienced crop loss in the last one or two years. Approximately 58% of the total sample farmers reported crop loss, further emphasizing the importance of crop insurance. Therefore, it is imperative to raise awareness about the PMFBY scheme and improve the methods of crop loss and compensation determination.

This will ensure that farmers receive the rightful compensation and are not financially burdened due to crop destruction, ultimately contributing to the overall welfare of the farming community.

While on the other hand, farmer who were availing the insurance scheme were asked if they will continue to use the scheme (Figure 5.7.4). Around 78% of the farmers answered in affirmative. Even after the grievances raised about the scheme and its processes, the beneficiaries of crop insurance want to continue availing the benefits of the scheme.

![Figure 5.7.3 Opinion of sample farmers willing to avail crop insurance scheme in future](image)

![Figure 5.7.4 Opinion of beneficiary sample farmers to continue using crop insurance scheme](image)
5.7.3 Challenges and support required in sale of produce

According to the survey conducted among sample farmers, it was found that a significant proportion of farmers faced challenges in the agriculture marketing system. Figure 5.7.5 highlights the overall reasons reported by sample farmers for not going to APMC mandis. Specifically, 40% of the farmers reported having to wait for days to sell their crops, while 29% stated that they did not receive payment on time when they sold their produce at APMC Mandis. Moreover, issues related to high commission rates and poor behaviour of government officials were also highlighted. These challenges point towards the high cost of marketing and transactional inefficiencies in the existing agriculture marketing system, which leads to low price realization for farmers.

<table>
<thead>
<tr>
<th>Reasons for not selling their produce in APMC mandis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low profit/ good prices in open market</td>
</tr>
<tr>
<td>Bad behavior of govt. officials</td>
</tr>
<tr>
<td>High commission rates</td>
</tr>
<tr>
<td>Have to wait for days to sell a crop</td>
</tr>
<tr>
<td>Lack of storage facility at the center</td>
</tr>
<tr>
<td>Delay in getting payment</td>
</tr>
<tr>
<td>Govt agency does not have facility to buy my crops</td>
</tr>
<tr>
<td>No govt. purchase center in the nearby vicinity</td>
</tr>
</tbody>
</table>

Due to the availability of various options and information, farmers are unwilling to settle for lower prices that they may get at the mandis and instead choose to sell their produce in other markets where they can get better prices. This further emphasizes the need for reforms in the agriculture marketing system, with a focus on improving infrastructure and providing better market access to farmers, which could result in better price realization for their produce.

The sample farmers reported that they sell their produce to middlemen due to reasons like it being easier to sell to the middlemen than it is to sell at APMC mandis; repaying the credit taken from the middlemen in lieu of their produce; expenses incurred in selling to middlemen is much less as compared to selling it at the APMC mandis.

5.7.4 Role of intermediaries

The findings suggest that the role of intermediaries in the agriculture value chain is a major challenge for farmers. These intermediaries often do not add value to the produce but still take away a significant share of the prices from the producers.
The survey results revealed that 46% of the sample farmers believed that middlemen/arhatiyas determine the prices of produce and impact the choices and interpersonal relationships with farmers. In contrast, only 19% of sample farmers reported having very low influence in farming activities. The influence of intermediaries also extends to market choices of farmers, such as the type of products and pesticides used. It is therefore essential to understand the issue of intermediaries in the agriculture marketing system, and measures should be taken to minimize their influence on farmers’ choices and prices.

Additionally, the study found that 53% of the sample farmers believed that they could obtain better prices for their produce if they had access to storage facilities. This suggests a need for greater awareness and education among farmers regarding the benefits of storing their produce and minimizing distress selling. Figure 5.7.6 shows the opinion of sample farmers on influence of middlemen on them.

![Figure 5.7.6 Middlemen/arhatiyas' level of influence according to respondents](image)

### 5.7.5 Perception towards online trading

The establishment of unified online marketing platforms has been viewed as a potential solution to reduce information asymmetry between buyers and sellers, promote real-time price discovery, transparency in the auction process, access to a nationwide market for farmers, attain pricing that is commensurate with the quality of produce. However, literature and field observations suggest that these platforms have a very low success rate, and there is also a lack of trust and information about such platforms.

Despite these challenges, it is interesting to note that 30% of the respondents in our sample expressed their willingness to sell their produce in online marketplaces such as e-NAM (Figure 5.7.7). This underscores the potential for online platforms to offer an alternative marketing channel for farmers, provided that their concerns about trust and access to information are adequately addressed.
The following graph demonstrated the breakdown of district-wise response among sample farmers’ opinion towards online marketplaces.

The figure 5.7.8 show the opinion of the respondents towards online marketplaces such as e-NAM. Even though a unified online platform is touted to be a solution for many problems faced by the farmers, there is lot of information asymmetry among farmers about the platform which must create hesitance among them preventing them from choosing them.

![Figure 5.7. Willingness to sell produce in online marketplaces](image)

![Figure 5.7.8 Willingness to sell produce in online marketplaces district-wise](image)

![Figure 5.7.9: Perception of sample farmers towards e-trading platforms (e-NAM)](image)
We can see from the figure 5.7.9 above the perception among sample farmers about e-NAM platform. In Assam, Andhra Pradesh, Maharashtra, and Rajasthan, a significant percentage of respondents (ranging from 19% to 30%) do not trust digital technology. In Uttar Pradesh, a large percentage of respondents (71%) do not trust digital technology, which could pose a significant challenge to the adoption of digital solutions in the state.

A majority of respondents in almost all districts (ranging from 50% to 80%) have no knowledge of the online transaction process, which is another significant barrier to the adoption of digital solutions. The sale process being complicated is a concern for a small percentage of respondents in most districts, except for Anantapur (17%) and Meerut (16%).

Delay in receiving online payment is a concern for a small percentage of the respondents in most districts, except for Nagpur (19%), which has the highest percentage among all districts. Discovering prices and sorting facilities is a concern for a small percentage of respondents in most districts, except for Baksa (13%), Krishna (5%), and Pali (8%).

In Kaushambi district, only 1% of respondents find discovering prices and sorting facilities cumbersome. However, a significant percentage of the respondents (16%) were concerned about the complexity of the sale process. Disrupting relations with traders is a concern for a small percentage of the respondents in most districts, except for Meerut (4%) and Kaushambi (0%).

5.7. 6 Enhancing income through farming

Crop diversification from the current cropping pattern is an immediate need for promoting sustainable agriculture practices and increasing income generation through in-demand crops. In our sample, slightly more than half (56%) of respondents believe that growing cash crops such as vegetables, pulses, and oilseeds will increase their income.

![Figure 5.7. 10 Opinion of respondents on increasing their income through farming cash crops](image)
To understand the farmers’ choices, the survey asked the farmers the delivery channel they prefer the most to sell their produce. Figure 5.7.11. shows the district-wise variation among farmers in terms of their preference.

![Figure 5.7.11 Best delivery channel to sell the produce according to the respondents](image)

Local traders or middlemen are the most preferred delivery channel for farmers in all the districts, with percentages ranging from 88% in Assam to 84% in Rajasthan. This indicates that farmers prefer middlemen to sell their produce, which may be due to factors such as lack of access to markets or lack of bargaining power.

Government Minimum Support Price (MSP) is the second most preferred delivery channel in most districts, with percentages ranging from 8% in Solapur district of Maharashtra to 61% in Krishna district of Rajasthan. This suggests that farmers do prefer to sell their produce through government support, which may provide them with a more stable income and help them negotiate better prices.

Online trading platforms are not yet widely preferred by farmers, with the percentage ranging from 0% in Assam to 42% in Pali district of Rajasthan. Reaching supermarkets or exporters is not a popular delivery channel among farmers, with percentages ranging from 0% in some districts to 28% in Meerut district of Uttar Pradesh. This may be due to factors such as lack of access to markets or limited market demand for their produce.

Direct access to shops is not very popular, with the percentage ranging from 0% to 42%. This may be due to the challenges farmers face in establishing direct market linkages, such as lack of transport infrastructure or limited bargaining power.

In the figure 5.7.12, the overall choice for sale of produce among sample farmers can be seen.
About 71% of the sample farmers claimed that they can sell better and get better prices when they sell to local traders or middlemen and 29% of the sample farmers thinks that getting government mandated MSP is the best choice.

About 19% of the sample farmers claimed that trading their produce online would help them sell better. More than two-thirds of the farmers preferred to sell their produce through local traders or middlemen. This is an interesting finding which needs further investigation.

As it is observed in field visits and through survey, there are multiple reasons for farmers selling their produce to them which ranges from flexible process, no transportation needed and immediate payments. However, this can also lead to lesser price realisation for the farmers.

There are several ways that can be adopted by farmers to increase growth in income from farming. In the survey, it was enquired which of the following methods do the sample farmers prefer the most. The responses from sample farmers were as follows:

Figure 5.7. Overall best delivery channel to sell better according to total respondents

4 Local trader/ middlemen implies both license and unlicensed large farmers, traders or middlemen who are significant actors at a village and block level. They are affluent people who provide credit to farmers, buyers of farmers produce at village level from the farm itself and later sell in mandis, mills and processors.
The overall choice of the method to improve income according to sample farmer is shown in figure 5.7.14. According to the survey findings, approximately 60% of the sample farmers believed that they could increase their income by enhancing their productivity, while 22% of them suggested that changing crops could be beneficial. A small proportion of the respondents (9%)
expressed their interest in switching to livestock or poultry activities, while an equal proportion felt that there was no way to increase income through farming and that changing their job would be the only option. The farmers’ preference for crop diversification towards profitable cash crops indicates that they are becoming more aware of the profitability of these crops and are shifting their focus from traditional cropping patterns.

![Figure 5.7. Sample farmers’ choice for long term investment](image)

One way of increasing income and productivity in farming is by investing in fixed and productive assets. However, due to the lack of resources and capital, farmers tend to invest minimally, even though multiple avenues for long-term loans are available to them. As per the survey, approximately 43% of the total farmers expressed their willingness to take long-term loans from sources such as Kisan Credit Card (KCC), Agri Infrastructure Fund, or Agricultural Marketing Infrastructure (AMI) for investment in enhancing their income and crop productivity. The following chart illustrates the respondents’ preferred choices for long-term investment.

The study aimed to explore the challenges faced by farmers in the application processes, uptake of schemes, and opinions about existing structures and schemes. By gaining insight into the ground-level issues in agriculture from farmers, the study provides valuable information about the functioning and implementation of government schemes, different agricultural practices, and areas where farmers require assistance and support.

The survey included several questions aimed at understanding the felt needs of farmers, and the respondents were also asked about the kind of assistance they require the most from the government. We can see the district-wise responses from sample farmers for this in figure 5.7.16. The findings reveal that farmers require support in improving access to credit through a flexible process and with lower interest rates, as well as in ensuring the adequate availability of quality inputs and irrigation facilities. The graphs presented in the study indicate that enhancing crop productivity is a critical factor for increasing farmers’ income, and achieving this goal requires efficient and adequate availability of inputs and credit.
The results of the survey indicate that farmers are facing significant obstacles in accessing even the most basic requirements for farming, highlighting the need for policies to address these challenges. Improving access to credit and ensuring the adequate availability of inputs and irrigation facilities are crucial steps in promoting sustainable agriculture and enhancing farmers' livelihoods. The study's findings provide insights that can inform the development of effective policies to support farmers and promote sustainable agriculture practices.

Figure 5.7. 16 Assistance required from government according to respondents
The results of the survey indicate that farmers are facing significant obstacles in accessing even the most basic requirements for farming, highlighting the need for policies to address these challenges. Improving access to credit and ensuring the adequate availability of inputs and irrigation facilities are crucial steps in promoting sustainable agriculture and enhancing farmers' livelihoods. The study's findings provide insights that can inform the development of effective policies to support farmers and promote sustainable agriculture practices.

Figure 5.7. 17 Assistance required from government
Annexure VI: Notes from Stakeholder Interviews and FGDs

6. 1 State Warehousing Corporation

Q.1 What is the process of registration for warehouses according to The Warehousing (Development and Regulation) Registration of Warehouses Rules, 2017?

**Assam**
- Under State Warehousing Corporation (SWC), registration should be done in the name of an authorised representative (AR) from the warehouse.
- The next step is to get the approval of the Board of Control, after which the AR’s personal details are collected by the WDRA. Then the registration process of the individual warehouses can start. WDRA requires specific details regarding the warehouse like the year of construction, amount of space, number of employees, security set of the godowns etc.
- There is no particular time frame, and if all the documents are ready the process can be completed within 15 to 20 days. The process is very simple. The WDRA Act, 2017 has the application procedure outlined for warehouses. After application, WDRA conducts inspection to ensure all the norms in the application and warehouse before deciding to give licenses.

**Andhra Pradesh**
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**Maharashtra**
- Around 80% of the warehouses are registered under WDRA. An application has to be submitted for the registration with a small registration fee after which the quality check is conducted to check whether the warehouse meets all the technical criteria as per the WDRA norms.
- If all the criteria are met then the warehouse is registered. A maximum of 2-3 months is taken for the entire process.

**Rajasthan**
- The WDRA Act, 2017 has the application procedure outlined for warehouses. After application, WDRA conducts inspection to ensure all the norms in the application and warehouse before deciding to give licenses.

**Uttar Pradesh**
- A warehouse applies according to the procedure outlined by WDRA. WDRA then conducts an inspection to ensure that norms are compiled to issues the license.
- The process takes about 15-20 days. If there is any issue, a query is raised and only after it is addressed the license is approved.

Q.2. How does an e-NWR work? Is the electronic receipt successful in addressing the shortcomings of the previous physical copy?

**Assam**
- Assam SWC has not registered a single warehouse under WDRA yet and so e-NWR is not functioning within Assam.
- Before 2019, NWR was working in Assam. Since the announcement of compulsory issuing of e-NWR in 2019, both NWR or e-NWR are not being issued in Assam

**Andhra Pradesh**
• e-NWR is fully functional in AP. In case of warehouses which were registered under WDRA, it is mandatory to issue e-NWR for the food grains which are being stored in the warehouses.
• With the electronic receipts the farmers find it hassle free to carry out the transactions with the banking sector and the warehouses.
• In addition to this, the farmers can also pay the loan partially and use this e-NWR as a guarantee. They can also transfer this e-NWR to other parties from their names by selling their goods without actually moving the goods from the warehouses.

**Maharashtra**
- In Maharashtra, since 2015, the warehouses have been generating electronic receipts.
- The electronic system has been successful in meeting the shortcomings of the physical receipts. If a farmer wants to take loan using the warehouse receipt, then they may ask for physical receipts and the warehouse issues a physical receipt.

**Rajasthan**
- Farmers storing their produce in warehouses are given e-NWR which they can use to avail credit. The physical e-NWR indeed used to create issues and was prone to damage.
- All warehouses are given e-NWR. Out of 93 warehouses in Rajasthan, 90 are registered.

**Uttar Pradesh**
- Only the private warehouses provide e-NWR to the farmers. Government warehouses are only used for storing the procured food grains.

Q.3. Given that there is a lack of technological know-how, how popular are e-NWRs amongst farmers? What kind of farmers are applying for e-NWRs (big farmers/small and marginal farmers).

**Assam**
- Given the fact that majority of farmers in Assam practice subsistence farming. Farmers were not the biggest users when it came to NWR in Assam.
- Even when NWRs were being issued in Assam pre-2019, majority of the people applying for NWRs were traders. However, with time the scenario is changing and once Assam is able to issue e-NWRs, the farmers in Assam would use it.

**Andhra Pradesh**
- Most of the farmers belong to the small and marginal category in the state. Since it is mandatory for warehouses registered under WDRA to issue e-NWR, the farmers are slowly getting accustomed to it.

**Maharashtra**
- There are all types of farmers coming to the warehouses for storing their produce. The farmers are gradually adapting to the new technology.
- With small farmers the main issue is that they do not have the capacity to hold their stock. At the same time, they also find it cumbersome to take the produce and go to the warehouse and store the produce there.
- The farmers find it difficult to arrange for the transportation to come to the warehouse and then from warehouse to APMC markets. Also, they find it difficult to understand the rates at which they should sell their produce when they store their produce in the warehouses. So, these farmers prefer to store their produce in the backyards instead of warehouses. Their need for money is very acute and they prefer to sell it immediately.

**Rajasthan**
- There is no technical difficulty in usage of e-NWR.
• The major benefits of e-NWR are taking loans against the produce. However, this need is fulfilled largely by KCC and remaining through non-institutional loans.
• General farmers: 60% rebate. SC/ST: 70% rebate on storage charges in government warehouses. No support is available to any farmers groups.
• Only traders and large farmers are using e-NWR. They have marketable surplus and resources to utilise the benefits.

**Uttar Pradesh**
• There is not much difficulty for farmers in using e-NWR or in procedure of taking them. However, small farmers do not store if they are able to sell their crops at MSP which is higher than market price. Sometimes, farmers might not get profit even if the price after storing is higher taking in account the storage and transportation charges.
• Only large traders store their produce as they are engaged in business and have marketable surplus, they buy at lesser prices and wait for the market prices to go high for selling. Small farmers do not have the means to go through this process to earn profits.
• Rapeseed is one of the crops whose market prices goes very high in off season. Traders and large farmers store these crops for months and take advantages after selling them later.

**Q.4. What is the process for issuing the Negotiable Warehouse Receipts (NWRs)? How easy is the process? And what are the barriers in the process?**

**Assam**
• Since Assam does not issue NWRs or e-NWRs this question does not apply to them.

**Andhra Pradesh**
• When issuing e-NWR, the farmers are required to register themselves and fulfil some norms, such as making an ID in the repository banks. These processes require some charges which need to be borne by the farmers. The farmers find the process to be lengthy and tedious. In addition to this, the charges that are to be borne by the farmers cause further inconvenience for them to use e-NWR at present.
• The small and marginal farmers often sell their produce to the local traders and wholesale markets and do not go to the other market players who may give them more value to their produce. This also happens because these farmers are not exposed to these markets so they do not know its benefits. This is a challenge that is being faced by the corporation.

**Maharashtra**
• Once a farmer brings his produce to store at the warehouse and an e-NWR is issued against the produce stored with all the details being mentioned in the receipt.
• Under the WDRA format, a test-report has to be put which consists of quality parameters, such as amount of moisture etc. After the quality control of the product is met, the receipt is issued for those warehouses registered under the WDRA.
• For other warehouses, this test-report is not mandatory. One can come and store their produce against which an e-NWR will be issued.

**Rajasthan**
• The e-NWR system is quite new, the government is putting all efforts to bring together everyone to motivate them to use e-NWR.
• The process of availing e-NWR is easy and there are not many difficulties. However, farmers are not keen on using it. As this is an expansion process, it is taking time but the progress is good.

**Uttar Pradesh**
• Farmers storing their produce in both government and private storage are provided e-NWR which they can use to pledge loans or sell their produce online.
• The process is simple.
• Farmers are encouraged and supported for storing their produce. Farmer and cooperatives receive 30 percent and 10 percent rebate on storing their produce.

Q.5. What is the awareness level about NWRs among farmers? Any estimate about how many NWRs is issued by the state in a season?

**Assam**
• Since Assam does not issue NWRs or e-NWRs this question does not apply to them.

**Andhra Pradesh**
• Farmers should be educated about the usefulness of the NWRs. Small and marginal farmers are not using the e-NWR to its full potential.
• The farmers don’t feel the need to use e-NWR in place of physical receipts and awareness should be given by educating them about the benefits of e-NWRs that they can avail, such as, selling their produce to vast scale markets where they may get better value etc. instead of selling them in the local markets for marginal rates.

**Maharashtra**
• There is low awareness among farmers regarding NWR receipts. The farmers associate these receipts with loans. They know that these receipts given by the corporation can be used to get loan but they don’t know the benefits and usage of these receipts.

**Rajasthan**
• The awareness level is not high. As the e-NWR is in initial stages, the awareness is improving through effort by Warehouse Corporation, storage units and the state government.
• Expecting farmers to store their produce and use e-NWR is very advanced when around 90% of farmers are selling their produce through middlemen or traders.
• Although, farmers nowadays are aware of the market dynamics on the price of crops and they take decisions accordingly.

**Uttar Pradesh**
• There has been very slow progress on its awareness. However, it is also due to the fact that farmers are not very interested in using them.
• As per the aim of propagating the benefits of e-NWR and expand its usage among farmers, the progress is unsatisfactory.
• There is a difference between consuming and production regions of the state. Farmers in the higher productivity regions use more of e-NWR (western UP).

Q.6. What can be done to expand the coverage of e-NWR among farmers?

**Assam**
• Since Assam does not issue NWRs or e-NWRs this question does not apply to them

**Andhra Pradesh**
• Campaigns should be organized at the grassroot level. The farmers should be educated about the benefits of these provisions at the village and block level by Rythu Bharosa Kendras and the Panchayat.

**Maharashtra**
• Creating awareness among the farmers is the first step that can be taken.

**Rajasthan**
If we have to expand its coverage, there is a need to address the immediate requirement of funds after the harvest through other modes so they do not have to resort to distress sale.

The information is reaching the farmers but there should be increased efforts from the authorities as the progress is slow.

**Uttar Pradesh**
- More awareness programmes to explain the benefits of usage of farmers.
- There is hesitation or a lack of trust among farmers in going through the whole process of storing and using e-NWR. They rather preferring their produce immediately and taking the money.

Q.7. **Do you organise awareness programs about different warehousing facilities/benefits of using e-NWR that are available to the farmer?**

**Assam**
- Since Assam does not issue NWRs or e-NWRs this question does not apply to them.

**Andhra Pradesh**
- Yes, we are educating farmers about the benefits of using e-NWR. The farmers who store their produce in their warehouses, awareness programmes are organised for these farmers about the e-NWRs.

**Maharashtra**
- MSWD has conducted 32 camps last year to create awareness about the e-NWR receipts. This year also MSWD has conducted 7-8 camps for educating the farmers.
- An outside agency has been outsourced to go to different locations and educate the farmers about this.

**Rajasthan**
- The CDSL Commodity Repository and the National E-Repository Limited (NERL) are responsible for storing data about the awareness programmes that e-NWR organises at the warehouses.

**Uttar Pradesh**
- Awareness programmes are conducted to explain the process and benefits of e-NWR under Farmers Extension Services (FES) scheme run by state government.
- Central Warehouse Corporation also organises awareness campaigns. These campaigns are conducted in the warehouses and sometimes through meetings, farmers who bring their produce and other too are trained of the usage process, preventing their produce from damage made.
- WDRA organise campaigns at block level for farmers about the benefits of e-NWR. All these are organised for the farmers who are storing their produce.

Q.8. **WDRA introduced multiple changes in rules and regulations according to the transformation plan in 2015-16. How have things improved since the new rules have been adopted in 2017?**

**Assam**
- In 2015-16 some studies were done to assess the issues and according to that it was suggested that e-NWR should be introduced and since Assam SWC does not have any warehouses registered under WDRA those changes have not been implemented. They would be implemented once Assam is registered under WDRA.

**Andhra Pradesh**
• The improvement is very slow. The farmers have to be educated first about the vast options in terms of markets that are available to them if they store their produces in the warehouses.
• The new rules have made registration process much easier for the warehouses to register under WDRA

**Maharashtra**
• The progress is slow. Even though the e-NWRs are being issued, its uptake among small and marginal farmers is found to be very low.
• There needs to be creation of awareness among the farmers regarding the benefits for encouraging them to use warehouses.

**Rajasthan**
• The official did not have knowledge about this

**Uttar Pradesh**
• The changes brought with this amendment was brought in order to address the issues faced by farmers due to physical receipt, prevent its damage and expand the scope of its usage.
• The shift to e-NWR is beneficial but the adoption and usage is low. Therefore, it is difficult to assess the impact.

**Q.9. In 2017, 2 repositories were created for the creation and management of e-NWRs. How do these repositories’ function? And how have they benefited the e-NWR set up?**

**Assam**
• Since Assam does not issue NWRs or e-NWRs this question does not apply to them.

**Andhra Pradesh**
• e-Repositories have been very useful in educating the process of e-NWR. They have been addressing the queries that have been put forth to the Corporation and also giving clarification in case of any doubts.
• They have also been conducting sessions to educate the warehouses about the new rules and changes.

**Maharashtra**
• There has not been much benefit of the e-repositories. It will take some time for these repositories to function to its fullest.

**Rajasthan**
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**Uttar Pradesh**
• These are independent authorities responsible for storing all the data regarding e-NWR

**Q.10. Is there a standard operating procedure (SOP) for warehouse inspection, monitoring and management followed by the state government?**

**Assam**
• Assam SWC follows the standard operating procedure as recommended by WDRA. Before the product is stored in the godowns, activities like moisture content grading of the product are done.
• The inspection reports are available to be seen by the public but they are not available online. Someone needs to visit the SWC office in order to view them.

**Andhra Pradesh**
• Yes
Rajasthan
- There is no monitoring or inspection done by WDRA after the registration of private warehouses, SWC conducts.

Maharashtra
- Yes. A quality analysis of the warehouses is conducted while they apply for registration warehouses according to the rule and regulations prescribed under WDRA. Only when the conditions are met the warehouse is registered.

Uttar Pradesh
- WDRA follows the SOP according to its rules for inspection, monitoring and management at the time of registration of the warehouses.

Q.11. What are the benefits to warehouse owners of registering the warehouse with the government?

Assam
- The government is trying to formalize the agricultural economy in order to better support and monitor the situation of agriculture in India.
- So, for someone to register their warehouse with the government would help tremendously with that. It will also be beneficial for all the stakeholders in the agriculture sector including farmers.

Andhra Pradesh
- The warehouse owners get the right to issue warehouse e-NWR and NWR receipts. This will also help them to pledge in the banks and rotate their turnover economically.
- The private owners will have the exposure to larger markets where they can sell the produces stored in their warehouses.

Maharashtra
- The owners do not get benefitted much by the registration of the warehouses.
- The owners have to pay some chargers for registration. The return on investment is less and time-taking. The chargers are to be borne by the depositors but the farmers do not show willingness to pay any charges.

Rajasthan
- All the procurement by the government is done with the registered warehouses. Sometimes, government, in case of requirement take the services of private warehouse for storage on rent.
- There is smooth process due to the legitimacy they acquire through WDRA for storage, taking loans and lastly sale of process.
- Banks also prefer to sanction loans to these warehouses if they are registered.

Uttar Pradesh
- Warehouses owners after being registered on WDRA can sell the produce in any part of the country. With the e-NWR, they can pledge loans and take credit.

Q.12. Government is working towards developing warehousing capacity through several schemes since 2001. How will you rate the performance of these schemes in achieving the objective?

Assam
- The SWC is not building new warehouses but renovating old warehouses under Assam Agribusiness and Rural Transformation Project (APART) scheme and under Rural Infrastructure Development Fund of NABARD.
• SWC works in coordination with the government. The government is working towards building more warehouses and the government only provides the land for building more warehouses and asks SWC to build more warehouses.
• Assam SWC has a capacity of 2.5 lakh MT and 41 warehouses. The demand and supply of storage varies from state to state. In some districts there is more than enough storage, whereas in other districts the storage capacity is not up to the mark and there are a few districts that do not have any SWC warehouses.

Andhra Pradesh
• Various schemes such as 7-year Guarantee Scheme, WIF Scheme, RKBYS Scheme etc. have been implemented by the government to subsidize the construction of the warehouses.
• These schemes have helped in boosting the capacity building of the warehouses in both government and private sectors.

Maharashtra
• There are a few challenges. Their registration process is a bit cumbersome. The warehouse owners do not have any benefit in the process. The registration charges are supposed to be borne by the depositors but the farmers do not want to bear any charges.
• Another issue is even though e-NWR receipt is generated, the farmers have to physically go and approach the banks for loan. There, it becomes like any other receipt. For instance, the MSWD has tied up with financial institutions such as Maharashtra State Cooperative banks since 2021, where the e-NWR receipt generated and it is centrally processed and linked to the Bank Head Office where it is updated. This facilitates online application of loan without the need for farmers to go and physically submit the application and the bank can be view the receipt, review and disperse online within 1 or 2 days. The WDRA e-NWR receipt is an incomplete procedure.

Rajasthan
• Government is developing 2.5 lakhs MT storage capacity. The state government has sufficient capacity, only 25-30% godowns are filled.
• Through WIF and RIDF, SWC are building warehouses. NABCOMS are doing geo tagging for all warehouses.
• NABCOMS and Gati Portal have the data for all warehouses-government and private.

Uttar Pradesh
• The progress under schemes is satisfactory considering the requirement of storage capacity. Around 30 lakh metric tonne capacity is being developed which will fulfil the mandated required capacity of warehouses.
• Although, there is no scarcity of warehouses in the states. On the contrary it is sufficient if not more than what is being used.

Q.13. Any suggestions in terms of any structural changes in policies or support from the state government? Structural problems in the existing system.

Assam
• Out of 35 districts of Assam there are no warehouses in 14 districts, SWC would like to be able to build new warehouses in those 14 districts, however there are issues regarding land availability in those districts and so the corporation would like government’s help in getting land in those 14 districts.

Andhra Pradesh
• The warehouses should be constructed at village level which will help more farmers to store their produces.
• Government support needed for construction of new warehouses by allotting the land and money and guarantee to loans etc.

• In terms of farmers aspect, the e-NWR should be made more user-friendly for the farmers. The e-Repository mentioned that warehouses can be linked with the banks to give some subsidy in the interest rate on the loans that are taken on foodgrains. But this has not been implemented.

Maharashtra
• Loan disbursements through banks has to be made easier.

• Government has to review the charges. The period of warehouse receipt has to be increased from 6 months and the extension also requires chargers. The charges should be delinked from the quantity.

Rajasthan
• Market competition is a major challenge.

• Warehouse Corporation is a commercial business. However, they are governed by certain rules and regulation which is not the case with private warehouses.

• Many people tend to prefer private warehouses over government due to lesser chargers. Although there are risks involved in that as they do not follow all norms or provide insurance.

Uttar Pradesh
• Farmers have to pay fee to the repository also apart from the warehouse for storing their produce. This is one of primary concern for the farmers they are paying for the services of the repository increasing the charges paid by them. Either government should pay this on behalf of farmers or stop these extra charges. This can help in encouraging farmers for usage of e-NWR.

• The officials were of the opinion that the farmers are not able to utilise the benefits of e-NWR while the corporation is providing lot of support rebate on charges and keeping share of storage reserved for farmers.

• UPSWC does not take funds from the government and is running fully on the charges/fees earned through running the warehouses. Therefore, if their warehouses are left unutilised it results in losses for the corporation.

Q.14. There is a huge gap between food grain production and warehousing capacity in the country even after several reforms since 2010. What changes would you suggest in the current system to increase the storage capacity fast?

Assam
• There is more storage capacity in the private unorganised sector compared to public and the organised sector.

• WDRA is in the process of introducing new rules of for the working of the private sector there by integrating it into the organised sector fold. This would improve things dramatically.

• Small warehouses should be set up in agricultural sectors in order to reduce the transportation costs and local mandis should also be set up in rural areas.

Andhra Pradesh
• Yes, there is definite need for construction of more warehouses. Gradually the small and marginal farmers are getting aware about the advantages of storing the produces and selling when they get better prices than distress selling. They then store their produces
in their own houses etc which may affect the quality of the produce. More accessible warehouses will help these farmers to store their produce better.

**Maharashtra**
- There is a huge gap that is required to be met for storage of produces. The government has to provide some subsidy to promote creation of warehouses to meet the need for storage.
- In Maharashtra the warehouses cannot operate as a market unlike many other states where the warehouses operate as a market. This should be made possible for Maharashtra as well so that the warehouse owners’ revenue increases. This will promote the investments in warehouses.

**Rajasthan**

**Uttar Pradesh**
- Warehouse in Uttar Pradesh:
  - Existing capacity: 60 lakh metric tonnes; Private capacity: 10 lakh metric tonnes.; In process: 25 lakh metric tonne. Required storage capacity in the state is 100 lakh metric tonnes.
  - Due to demand-supply dynamics, there are some harvest seasons when the procurement is very less and the existing warehouses are also empty. As UP is both procuring and consuming state, the productivity in the season is incredibly important.

Q.15. In recent years, private warehousing capacity has increased manifold while public storage capacity is on a downward trend. What according to you are the reasons for this?

**Assam**
- There is no monitoring agency for private warehouses.
- Absence of proper guidelines for establishment of private warehouses.
- A trade license is required for private warehouses which needs to be taken from local municipalities board.

**Andhra Pradesh**
- The number of private warehouses has very much increased due to various schemes that the government has implemented for the construction of such warehouses.

**Maharashtra**
- It is good that private warehouses are increasing as it will help fill the gap of lesser number of warehouses. But private warehouses are usually for the traders and the processors than for the farmers’ produce storage purposes.
- Until and unless the warehouses are made at farm-gate level the farmers won’t benefit much.

**Rajasthan**
- Warehouse capacity in Rajasthan: Government: 16 lakh MT, Private: 70 lakh MT.
- Through the agricultural export policies brought by Rajasthan government in 2019, government encouraged warehouse owners to not just store but also do secondary processing, grading and value addition in order to prepare the produce for export. However, this is not happening and currently the warehouses are only used for storage. Private warehouses were benefited through this policy.

**Uttar Pradesh**
- In UP, the government warehouse capacity is comparatively much larger than private ones.
6.2 State Agriculture Marketing Board

Q.1. Developing and upgrading Gramin Haats as GrAMs as a local aggregation point and direct marketing is one of the main focuses of the scheme. What is the status of these GrAMs? Have they enabled direct sale to consumers and bulk purchases? How do they function? Do farmers bring their produce to these markets?

Assam
- In Assam, Gramin Haats and Rural Haats are owned, managed, and controlled by Panchayat and Rural Development (P&RD) Department.
- As informed by P&RD, developing and upgrading of rural Haats into Gramin Agricultural Haats are yet to be implemented. Traditionally, 55% of agricultural produce is directly sold to aggregators and traders at farm gates.

Andhra Pradesh
- In Andhra Pradesh there are 423 rural markets. Out of those, 363 rural markets are run by local bodies; and 22 rural markets are run by marketing department and other agencies.
- Majority of the rural markets are run by gram panchayats. Rural markets are not only meant for agricultural produce but they also cater to farmers everyday needs. In the rural market set up, there are no exclusive agriculture markets that are present. All the rural markets are multi-commodity markets.

Maharashtra
- In the State of Maharashtra, Gramin Haats as GrAMs are kept out of purview of the State Marketing Act.
- The Director of Marketing, Maharashtra State, is the Nodal Agency to implement the GrAMs scheme.

Rajasthan
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Uttar Pradesh
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Q.2. How is the Board approaching the infrastructural development of these RPMs/GrAMs?

Assam
- Under the World Bank funded Project APART (Assam Agribusiness Rural Transformation project), the Government of Assam is upgrading and modernizing the 101 agricultural wholesale markets. This includes rural haats having wholesale transaction of agricultural produce.

Andhra Pradesh
- The marketing infrastructure in mandis and rural markets is set up with marketing department funds. The mandis and markets in Andhra Pradesh are self-sufficient.
- A market fee is collected from the traders from all the government markets and mandis, that are collected by the marketing department. It is these funds that are used for the development of infrastructure as and when needed.

Maharashtra
- The Maharashtra State Agricultural Marketing Board (MSAMB) does not develop GrAMs.

Rajasthan
Q.3. What is the process of availing subsidy under the scheme by the state government? Which agencies are majorly involved in these activities?

**Assam**
- The Directorate of Agriculture, Assam may be consulted for further queries.

**Andhra Pradesh**

**Maharashtra**
- The Marketing Department at Mumbai is Nodal Department and The Director of Marketing; Maharashtra State, Pune is the Nodal Agency to implement the GrAMs scheme in the Maharashtra State.

**Rajasthan**

**Uttar Pradesh**
- The AMB makes the rules and regulation for government on technical and market intelligences, alternative marketing systems, and licenses for direct purchases and private mandis.

Q.4. What is the step-by-step process in sanctioning and releasing bank loans and subsidies?

**Assam**
- Directorate of Agriculture, Assam may be consult for further queries.

**Andhra Pradesh**

**Maharashtra**
- NA

**Rajasthan**

**Uttar Pradesh**

Q.5. Do you organise training programmes related to agricultural marketing including grading, standardisation and quality certification? How is the participation from farmers?

**Assam**
- Yes, training programmes are organized by Assam State Agricultural Marketing Board (ASAMB) on agricultural marketing including grading, standardization and quality certification. Farmers are the main participants in these trainings.

**Andhra Pradesh**

**Maharashtra**
- NA

**Rajasthan**
- Farmers are sensitised about newer technologies and awareness programs are organised.
Uttar Pradesh
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Q.6. How do they assess the performance of the scheme? Do they submit yearly reports to DMI? Do they collect data at state level about the number of projects and subsidies sanctioned?

Assam
Not Applicable

Andhra Pradesh
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Maharashtra
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Rajasthan
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Uttar Pradesh
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Procedural Questions

Q.7. How many types of markets are there in your state? Name the markets where farmers bring their produce to sell?

Assam

- In Assam, Agricultural Markets are of three types that are owned, manage and controlled by four different authorities. Namely, a). Panchayat and Rural Development (P&RD) Department; b). Assam State Agricultural Marketing Board (ASAMB); c). Municipal Corporations/Boards and Autonomous District Councils. Farmers of the state are free to sell their produce in all markets including farm gates.

Andhra Pradesh

- There are 3 types of markets in Andhra Pradesh. There are rural markets located in every village and mostly operated by the panchayats. There are APMC Mandis at the district level operated by the state government and then there are urban markets located in major urban areas also operated by the state government.
- Due to funding concerns, panchayats collect commission charges determined based on the area. In tribal and hilly areas, farmers sell their produce to the rural markets, whereas other farmers that are able to transport their produce sell their produce to APMC Mandis as they are able to transport their produce. Farmers also sell their produce to traders as well.
- Farmers sell their produce at AP state warehouse corporation also. The government has also set up markets in urban areas. There are more than 100 such markets in Andhra Pradesh. Farmers are free to sell there produce in these urban markets without any payments since they sell locally grown produce. However, any sellers selling produce that is not grown in Andhra Pradesh have to pay some amount of rent to the market to sell their product.

Maharashtra

- There are four types of markets in the state of Maharashtra.
  1. Agricultural Produce Market Committees
  2. Private Market
3. Direct Market Licenses

- Under Maharashtra Agricultural Produce marketing (Development and Regulation) Act, 1963, Agricultural Produce Market Committees are established.
- A total of 306 Agricultural Produce Market Committees are functioning in the Maharashtra state. List of 306 Agricultural Produce Market Committees in Maharashtra is attached. Permission is granted by the Director of Marketing, Directorate of Marketing, Maharashtra State, Pune to establish and transact under Private Market and Direct Marketing. The list of these markets as well as the license holders will be available from the Director of Marketing, Directorate of Marketing, Maharashtra State, Pune.

Rajasthan
- There are 145 APMC mandis in the state and they are classified into five categories according to the fee collected.
- There is no legal restriction on farmers to sell their produce outside their local mandis or APMC mandis.

Uttar Pradesh
- Only about 40% of farmers sell in the mandis.
- The restriction towards selling mandis other than designated one is very strictly followed. The buyers if caught buying products out of mandi/direct purchase are made to pay the mandi fees and the farmers are asked to sell to their designated mandi.

Q.8. How does one as a trader receive a licence for trading in the market?

Assam
- Traders willing to trade in the markets of notified market areas have to obtain a licence from the concerned Regulated Market Committee (RMC) under the provisions of the Assam Agricultural Produce Market (AAPM) Act, 1972.

Andhra Pradesh
- Marketing department is responsible for providing the licence to the traders. The licences for commission agents are limited as per the availability of space in the markets. However, the licences for traders are not limited like that and if the eligibility criteria are met the licence can me issued.
- When it comes to eligibility, the process is very simple. Certain documental requirements (a Rs. 100 fee and a Rs. 5000 fees for a licence of 5 years) are required.

Maharashtra
- Under Section 7 of the Maharashtra Agricultural Produce Market (Development and Regulation) Act, 1963, licenses are issued to traders to carry on the business of buying and selling agricultural produce through Agricultural Produce Market Committees. Also, the market committee has the office of the Director, ATMA, Maharashtra State, Pune.

Rajasthan
- Traders apply to the APMC committees. A security deposit of Rs 10,000 is required for application.
- Commission Agents bring farmers and buyers together on a platform. They provide certain services such as auction platforms for which they charge the Traders (decided by the government) but nothing from the farmers.
- Mandi fee is borne by the purchasers. They pay the defined mandi fee to the APMC committee.
• Mandis has adequate marketing infrastructure. The market yards also have covered platforms in case of weather emergency. Infrastructure in mandis is developed by the funds with the APMC committees from the fee/tax collected.

Uttar Pradesh
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Q.9. Can the state marketing board try to manage the price fluctuations of agricultural produce? And how?

Assam

• The Regulated Market Committees under ASAMB check the wholesale price of agricultural produce, but not related with retail price fluctuations.

Andhra Pradesh

• Price fluctuation is managed by the marketing department, where if the price of a product dips very low then the state government intervenes and buy all the produce at a better price then the current market price and then sells it in a different area at cost.
• In every village, there is a field village assistant that feeds the information about the price of the produce to the marketing department. If any intervention is required then the marketing board intervenes.

Maharashtra

• Maharashtra State Agricultural Marketing Board (MSAMB) runs the Road Transport Subsidy Scheme which promotes the interstate trade. The scheme has tied up in such way that, farmers can enhance their trade capacities by sending their produce to other states by their own; they can get advantage in terms of rates when they have surplus production.
• MSAMB also run the scheme namely ‘Fruit and Grain Festival Subsidy Scheme’, the main objective of this scheme is to bring both producers and consumers on one platform by eliminating middlemen. This facilitates getting better rates to producers and quality produce to consumers at reasonable price.
• Around 25 -30 such festivals are organized through schemes or by own. The scheme details are as follows,
  1. Interstate Agricultural Commodity Trade: Road Transport Subsidy Scheme
  2. Fruit and Grain Festival Subsidy Scheme.

Rajasthan
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Uttar Pradesh
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Q.10. Have the mandis in your state set up e-auction halls and storage facilities for the smooth functioning of e-NAM? More in detail about eNAM?

Assam

• ASAMB through the Government of Assam has submitted proposal to the Government of India for connecting its three markets yards to e-NAM portal. It is now under the consideration of Government of India.

Andhra Pradesh

• Apart from paddy that is directly purchased by the government, majority of the trading that is taking place for other produce in big markets like the one in Gunturu is taking place through e-NAM.
• At present, there are not a lot of functioning markets. In Andhra Pradesh, majority of the farmers produce paddy, that is then directly purchased by the government. and other major crop is chillis and that has its own dedicated market where farmers and traders sell and buy chillis through e-NAM. The chilli market near Gunturu is the biggest chilli market in the world.

**Maharashtra**

- Functioning of NAM is through e-Trading Platform.
  1. The Government of India is providing Software, Training & Service to APMCs and funds for procurement of computers & assaying equipment.
  2. 60 APMCs (Phase-I 30 & Phase-II 30) of Maharashtra State have been integrated with eNAM. First Phase started from September 2017 and second phase started from January 2018. The third phase started at 58 APMCs from July 2020. Currently, total 118 APMCs from Maharashtra is integrated with eNAM.
- Registration of Farmers – 12.20 Lakh
- Registration of Traders – 21,665
- Registration of Commission Agent - 17,502
- FPO – 271

**Rajasthan**

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**Uttar Pradesh**

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Q.11. Farmers’ willingness to join/ impediment in its functioning?

**Assam**

Not Applicable

**Andhra Pradesh**

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**Maharashtra**

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**Rajasthan**

- Low quantity of produce, logistical costs and lack of trust in digital technology are some of factor of lesser engagement in online trading among farmers.
- It is very difficult for this scheme to progress.

**Uttar Pradesh**

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Q.12. Awareness level about schemes?

**Assam**

Not Applicable

**Andhra Pradesh**

Not Applicable

**Maharashtra**

Not Applicable

**Rajasthan**

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**Uttar Pradesh**

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Q.13. Reduction in post-harvest loss?

Assam
- Infrastructure like cold storages & cold rooms, pack-houses have been created for reduction in post-harvest losses.

Andhra Pradesh
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Maharashtra
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Rajasthan
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Uttar Pradesh
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Q.14. Is there produce wastage in your state? How do you deal with the produce wastage? And how can agriculturally produce wastage be avoided?

Assam
- Yes, there are instances of agricultural produce wastage in the State. Agricultural produce wastage is fed into the bio-compost pit created in a few markets. Under the Project APART, the training of farmers, traders and aggregators were conducted on Good Agricultural Marketing Practices (GAMPs) to build the capacity of market stakeholders for efficient marketing and reduced post-harvest losses.

Andhra Pradesh
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Maharashtra
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Rajasthan
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Uttar Pradesh
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- There is now much more transparency in the system. Subsequently, corruption has reduced.

Opinion Based Questions

Q.15. Reforms in agriculture marketing are aimed at promotion of competitive alternative agricultural marketing infrastructure by encouraging private and cooperative sector investments.

Assam
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Andhra Pradesh
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Maharashtra
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Rajasthan
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- Agriculture in India is troubled by the small size of land. In developed countries, farmers are using mechanisation, technology, perceive agriculture as an enterprise. There is no manual work.
• To approach agriculture as an enterprise, an Alagh Committee was appointed. FPO was introduced.

**Uttar Pradesh**
• There is a very low success rate in all these reforms. Due to several legal and regulatory restrictions, private investment has not increased. On the other hand, farmers are not used to sudden changes. They are slowly adopting the new methods. Given the fact that the existing system has been working for 5-6 decades, this alternative marketing system will only gradually be accepted both by farmers and traders/private players.

**Q.16. What is the status of private and cooperative sector investment in marketing and storage infrastructure? How much? If it is low, what are the possible reasons?**

**Assam**
• The status of private and cooperative sector in Agri-marketing and storage infrastructure is significant.

**Andhra Pradesh**
• The marketing department can issue licences to private players to set up their own markets. According to the rules set up by the government, the private players can also collect commissions from the traders using their facilities. However, this has not been very popular, only a few private players are utilising it.
• The reason for this is that farmers in AP are not used to selling their produce in the markets as one of the major commodities is paddy, and the farmer prefers to sell that to the government which does not require the farmers to transport the produce or worry about the cost.

**Maharashtra**

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**Rajasthan**
• Direct purchasing is happening although it is not very significant. There are five-six private mandis in the state.

**Uttar Pradesh**
• The rules were changed around one or two years ago but currently licenses for direct procurement are taken by few investors. No private mandis are established as of now. Many cold storages (for potatoes) and FPOs have established themselves as sub market yards with licenses.

**Q.17. What measures should be taken to promote the private entrepreneurs/ company’s investment under the scheme in the state?**

**Assam**
• Ease of doing business cell has been established at Department of Industries and Commerce.

**Andhra Pradesh**
• Private entrepreneurship and company investment in AP is difficult to promote given the fact that farmers would rather not travel very far to sell their produce and the current marketing system in AP doesn’t require the farmer to do that.

**Maharashtra**

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**Rajasthan**
• There is lack of landholding with FPOs. As a result, majority of FPOs do not go beyond formation and registration. It is immensely important that FPOs take it to the next level and work on capacity building and investing in resources and technologies. Private players need to be encouraged to participate in marketing system. Multiple options of buyers before producers ensure better prices.

**Uttar Pradesh**
• The private players are allowed to set up mandis and own market yards. They can take 75% of mandi fee and pay only 25% to the state agriculture department.
• The eligibility criteria for setting up the private market yards are too strict such as more than 2 hectares of lands and crores of investment. This is one of the major reasons for the low level of involvement from private players.
• The AMB has the dual responsibility of encouraging private investment in alternative marketing system while also ensuring that the government mandis are running properly. With the APMC, the board has power to regulate the activities of traders and middlemen. They ensure that the farmers are receiving timely payment by them. However, in private market they do not have much power to be able to ensure the irregularities. If the private investor runs away with farmers money, there is limited option with the AMB while in mandi there are multiple proofs of the transaction.

Q.18. Do you think that the support provided through AMI scheme and e-NWR has improved the access to institutional credit for farmers?

**Assam**
• Both the schemes (AMI & e-NWR) are yet to be implemented in the State.

**Andhra Pradesh**
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**Maharashtra**
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**Rajasthan**
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**Uttar Pradesh**
• The officials said that the government should take very low or no interest rate at all from the farmers as they are earning very less. The processors/exporter should be charged double interest rates as they are earning 4-5 times the money. The government should extract this money from processors/exporters. The farmers are the one who are exploited the most as they are the least influential in this chain.

Q.19. Has reducing the number of intermediaries and building supply value chains helped in promoting direct marketing?

**Assam**
• Yes, reducing the number of intermediaries and building supply chain helps in promoting direct marketing.

**Andhra Pradesh**
• Removing the commission agent’s system in the current marketing system would help reduce the intermediaries and also help in the promotion and utilisation of e-NAM.
• As most of the farmers face logistical issues, higher transaction costs and less marketable surplus, it has been decided to have alternate marketing channel to promote competition and better prices for farmers.

**Uttar Pradesh**
• There is no willingness from the government’s side to promote alternative marketing system. These policy decisions are taken at the state and central level.
• The state governments at the moment are not willing to give away their share of mandi fee. The buyers must pay a hefty fee/tax at every point (different states) and produce passes through to the authorities (state mandis).

**Q.20. Do you think a centralised system for marketing would be more beneficial to the farmers or a localised approach is better? And why?**

**Assam**
• A localized approach for marketing would be more beneficial to farmers as every state has different agriculture marketing ecosystem being agriculture a state subject.

**Andhra Pradesh**
• e-NAM system is very good, where farmer has access to a much bigger market and might be able to get better prices for his produce.
• However, the farmer is used to the current system and they would not want to change. And the commission agents would also not like the system to change as it would affect their livelihood.

**Maharashtra**
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**Rajasthan**
• The fragmented nature of mandis at district and state level creates many issues and act in silos. All mandis in Rajasthan are registered on the e-NAM portal. APMC committees does the quality testing of the produce.

**Uttar Pradesh**
• The involvement of private players along with government mandis will bring competition in the market. However, an equilibrium should be maintained between the both. A monopoly of a private player working independently can be detrimental to farmers.
• Online and unified marketing brings transparency for both the producers and buyers about the in-demand crops and the prices. This system will ensure the producer receive better and suitable prices for their produce according to the demand. Both consumer and producer will benefit since better quality of produce will be encouraged.

**Q.21. What in your opinion are certain changes that need to be made in order to improve access to marketing and ensure remunerative prices to small and marginal farmers?**

**Assam**
• Product aggregation, auction facility and access to different and distant buyers through an electronic platform could help the small and marginal farmers fetch better prices.

**Andhra Pradesh**
• Improving access to institutional credit would help give farmer more disposable income that can be then utilised by the them to wait a little longer to sell their produce, and therefore, to get better prices.

**Maharashtra**
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**Rajasthan**

- In the current system, farmers do not have the ability and capacity to do anything else other than subsistence farming. Majority of agriculture land is small and marginal, therefore there is no marketable surplus. Farmers are price takers as they have no bargaining power.
- Farmers do not produce quality produce and have low productivity as they use low quality inputs.
- All these issues can be addressed through collective efforts by FPOs. They can get better quality inputs and assurance of sale of produce. FPOs addresses the information asymmetry among farmers.
- The following steps need to be taken: improve competition in agriculture marketing, inculcate better practices, promote value addition, provide options of alternative marketing system and collectivisation through FPOs. Farmers need to take decisions according to demand. Currently it is supply driven and farmers act as price takers.
- Alternative marketing channels promotes perfect competition benefiting both producer and consumers.
- Rajasthan Promotion of Export Policy, 2019 supports these activities.

**Uttar Pradesh**

- Several policies and initiatives are brought by the government to change the existing system. However, as these were set up a century ago and are now established fully, it will take a decade or so to be able to transform to newer and alternative systems. Any new system takes a lot of time to establish.

**Q.22. How beneficial has the adoption of the Model APLM act, 2017 been? What is your opinion about a unified online platform/national for marketing?**

**Assam**

- The state has passed the Assam Agricultural Produce and Livestock Marketing (Promotion & Facilitation) Act, (2020), in the line of the Model APLM Act, to bring the reforms in agriculture marketing. These reforms intend to promote competitive alternative agricultural marketing.
- Adoption of Model APLM Act (2017) has not benefitted the farmers much in the state. Unified online platform may impact the farmers, only after the product aggregation and capacity building of the farmers.

**Andhra Pradesh**

- Based on the Model APLM act, 2017 Andhra Pradesh has also introduced reforms in the state.

**Maharashtra**

- The said Agricultural Produce and Livestock Marketing (Promotion & Facilitation) Act, 2017 has not been yet adopted by the Government of Maharashtra.
- However, a sub-committee has been formed about the adoption and improvements in the said Act at the State Level.

**Rajasthan**

Even after the reforms brought in 2003, no significant change in witnessed in the state with regards to contract farming and alternative marketing channels.

**Uttar Pradesh**

According to the model APLM Act, the UP Government brought provisions for direct purchase, setting up of private mandis and alternative markets but not contract farming.
6.3 Focus Group Discussion

Q.1. Where and how do you receive information about the scheme? Where do you go if your application is rejected?

Assam

Dhemaji

- The farmers of Poba Agro Ltd. get information related to agriculture schemes from Gram Sabha, Subdivisional Agriculture office and the Panchayat office.

Baksa

- The farmers get information from the agriculture department. If the application is rejected, then the farmers go to Agriculture office. If loan is rejected by the bank, they hardly try for the second time.

Andhra Pradesh

Krishna

According to the farmers, the following are their main sources of information:

- Adarsha Rythu
- Newspapers
- Group discussion
- Jai Kisan Channel
- Television
- Rachabanda
- Fertilizer shops
- Sachivalaya Office

Anantapur

- According to the farmers, following are their main source of information:
  - Rythu Barossa Kendra has an easy process of information voluntarily and systematically.
  - WhatsApp groups
  - Agriculture Officer
  - News channels and newspapers
  - YouTube channels are very helpful
  - Horticulture Office
  - Andhra Pradesh Micro Irrigation Project APMIP
  - Gram Sabha
  - Rathu Radam

- AP state government initiation is needed for root level awareness.

Maharashtra

Solapur

- The farmers who were present at the FGD of Solapur were found to have a serious lack of awareness about the various schemes available for them.
- Local community appeared to be the source of awareness creation among the farmers present in the discussion. All the farmers claimed that the panchayat and the banks are not very keen and regular in conducting any awareness camps in their village.
Two farmers also said that they had to go the banks and ask the officials there about any scheme or credit related queries in order to get information and often they face delays in the banks addressing to their concerns. However, the DDM of Solapur claimed that the awareness camps happen regularly and the banks notify the farmers whenever the camps are conducted.

When asked the procedure, they reported that only one farmer had faced the problem of rejection and he goes to the bank to understand why the application has been rejected and what can be done to resolve the matter. Although, he added that this process is difficult for him as firstly the bank officials are not very approachable. Secondly, he cannot leave his work in the field and spend an entire day at the bank.

**Nagpur**

- Gram Panchayat, Agriculture department and Banks are the information providers. The officers will come once in a year before the cultivation period to educate the farmers. However, the farmers claimed that there is no regular notification given on when these camps take place. Due to this they lack the opportunity to attend the camps. Only one farmer out of the 8 farmers had availed KCC. He availed it through a commercial bank (the Bank of India). The rest of the farmers did not apply for KCC or any term-loan.

**Rajasthan**

**Churu**

- There was very low level of awareness about schemes and the application process amongst the farmers. The government and bank officials are not very helpful. There were no awareness campaigns conducted in the village. Farmer knew only about a few schemes like KCC and PMFBY through others in the village or through radio or television programmes.

**Pali**

- Radio or television programmes, friends, family and panchayat office are the main sources of information.

**Uttar Pradesh**

**Meerut**

- As the farmers that were interviewed were part of an FPO, most of the information regarding any scheme or any other framing matter was received from the FPO.
- Some of the farmers also said that they receive some information from their neighbours and friends and family.

**Kaushambi**

- Majority of the farmers interviewed said that they receive most of their information either through friends and family that they then confirm from either the bank (in case of credit) or from the agriculture department (for any other matter).

Q.2. Have you thought about investing in productive/fixed assets? Do you know the scheme for long term loan facility and have you availed it?

**Assam**

**Dhemaji**

- The farmers of Jonai area have less knowledge about investing in productive fixed assets and less interest for long term loan facilities. Very few farmers are availing the long-term loan facility.

**Baksa**
Most of the farmers are less interested in investing in fixed assets due to their financial conditions and fear of the possibility of return. Some are aware of the tractor loan.

**Andhra Pradesh**

**Krishna**

**Anantapur**

- Only one person availed an infra development loan. The rest of them had no awareness of this.
- No subsidy loan is available for horticulture crops though Anantapur district is considered as a horticultural hub.

**Maharashtra**

**Solapur**

- The farmers claim that because of the small size of their land they never felt the need of investing in fixed assets like tractors and farm machineries. They largely rely on manual labour. For the purpose of irrigation, they use rainfall and wells as their main source of irrigation.

**Nagpur**

- All the farmers were small farmers with less than 1 acre of land and hence, did not feel the need to invest in fixed assets such as tractors, tube-wells, farm implements, pump sets. It was also found that the farmers were not aware of the schemes providing term-loan. The main reason for this was found to be the lack of any need for creating no inquisitiveness to know about the different schemes.
- When asked about the source of irrigation, the farmers answered that they mainly rely on wells and borewells, but do not take fixed asset loan for it fearing the repayment of the loan and the electricity consumption for agriculture use is subsidised which makes it less of a burden on the farmers.

**Rajasthan**

**Churu**

- Only few of the farmers owned tractors and used for farming activities. Majority of them took the tractors on rent when required. All the farmers owned marginal landholdings so there is very scope for capital investment.

**Pali**

- No farmer in the group had thought of taking long term loans though they were aware of the facility. As these farmers did not have large size of land or marketable surplus which would require fixed assets.

**Uttar Pradesh**

**Meerut**

- Majority of the farmers own their own tractors and have an irrigation set up. Some of the farmers do not rent these facilities and they have not thought about getting a long-term loan as the interest rate on it would be at least 10% and that is not something that they can afford.
- They also do not know of any scheme under which they could avail crop insurance.

**Kaushambi**

- Given the small size of land and the low income; investing in fixed asset has never been an option for the farmers. However, some of the farmers do rent a tracker, but most of them depend on manual labour or do most of the work themselves.
Q.3. Have you ever considered applying for organisations like FPOs, JLGs, SHGs? Or any other such organisation? Do you have the benefits associated with it?

**Assam**

**Dhemaji**
- As a FPO members, the farmers are getting some benefits from various schemes related to farming (like receiving fertilizers, insecticides, and pesticides from the line department). The farmers have medium-sized land holding and some have adopted scientific methods for farming.

**Baksa**
- There is a FPO in the area called Nachal Agro Producer Ltd. where they have 750 farmers and they are grouped in t20s. The company generally collects the products and sells it outside the district or sometime outside the state also.
- On the other hand, the other farmers who were part of the FGD have not heard of FPO or JLG. However, a farmer mentioned that they have purchased a tractor through SHG. The farmers who were part of the FPO benefit as the produce is marketed by the company.

**Andhra Pradesh**

**Krishna**
- The farmers had no knowledge about JLG, SHL, or FPOs.
- However, many of these schemes are just on paper but not functioning.

**Anantapur**
- Only one farmer was a part of JLG. The rest don’t have any such information about any such government schemes or farmer organisations. Government authorities are only working till they reach its target of minimum, after that they are not spreading information to more farmers.
- FPOs in the district were influenced by local political people

**Maharashtra**

**Solapur**
- The farmers were not part of any JLGs, SHGs or FPOs. They were not aware of any such organization as well the benefits that came with being a member of these institutions.

**Nagpur**
- None of the 8 farmers were a part of FPOs, JLGs or SHGs. They did not consider applying in these organisations as they did not know the benefits of joining these organisations indicating the lack of awareness among the farmers. Another reason for not applying for FPOs or JLGs is the procedural difficulty in applying for loans through these organizations. The farmers said that they find applying for loans through banks easier than through FPOs or JLG and SHGs.

**Rajasthan**

**Churu**
- There was no awareness about any farmers groups amongst the farmers. There were farmers who would be eligible for JLGs and would be benefitted by it.

**Pali**
- None of the farmers were aware of any farmers groups such as FPOs or JLGs nor were they aware of their benefits.

**Uttar Pradesh**

**Meerut**
- All the farmers from the FGD were part of an FPO.
None of the farmers that took part in the FGD were aware about any FPOs, JLGs, SHGs or any other such organisation.

Q.4. What is the size of your landholding? What methods do you use for farming?

Assam
Dhemaji
The farmers of Dhemaji district are not using very scientific technology for cultivation. Most of the farmers use traditional methods of farming. Some member of the FPO accept the scientific technology and they also practices and produce more than other.

Baksa
It was mixed. Some have 1-2 hectares and some have more (on an average 5 bigha 1 hectare= 3 bighas). The farmers use tractors for ploughing. For irrigation, tube well, deep well, etc. are used.

Andhra Pradesh
Krishna
- Manpower is taken to support for agriculture works but mostly the farmers are interested in working with the help of machinery.
- Even though it is manual or machine, they will show the same expenditure no virtual cost is given on tractors.
- Society has to form to access the schemes from the government. So nominal charges can be taken for diesel and power to work.
- Survey has to be conducted to find out the farmer issues. No information to farmers at ground level about scheme and technologies. No idea about solar power. No subsidies provided for using pump sets. 12 hours electricity limitation on land size.
- Fertilizer and Pesticide prices are fixed by the company and government office. But the end product crop price is fixed by the middleman.

(The six farmers who attended the FGD held different land sizes of 8 acres, 20 acres, 6 acres, 15 acres, 11 acres, and 4 acres).

Anantapur
- Tractors
- Spraying by machine
- No labour work
- Tractor will be utilized by electricity help to flatter land
- Heiring tractor on rent

(The five farmers held different land size. Namely, 30 acres, 30 acres, 4 acres, 15 acres, and 14 acres)

Maharashtra
Solapur
- The farmers were small farmers with landholdings less than 2 hectares. The farmers used traditional methods of farming with very minimal use of technology.

Nagpur
- All the 8 farmers were small farmers and they use traditional methods of farming. None of them use tractors or other machineries for farming. Irrigation is through wells and borewells. They do use fertilizers for their crops and had been vocal about the increased prices of fertilizers burdening them financially.

Rajasthan
Churu
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Pali
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Uttar Pradesh

Meerut
- The farmers had a land size ranging from 18.5 acre to 61.9 acre.
- All the farmers use machinery for farming. Some of them have their own, while others rent the machinery. Rate for renting a tracker varies however on average it is about Rs.150/hour.

Kaushambi
- The farmers part of the FGD had a land size ranging from 0.6 acre to 6.19 acre. Given the small size of land majority of the farmers use manual labour for farming some of the farmers rest trackers and irrigation set ups for farming.
- The rate of renting a tracker varies however on average it is about Rs.100/hour.

Q.5. As a small producer with limited resources, do you settle with the price you get at the local mandi or do you try to go to different places?

Assam

Dhemaji
- The farmers depend on local market some traders dealing with the whole product and they fixed the crop rate. Some time they supply to the outside of the local market.
- Sometimes, natural calamities such as flash flood, draught spells, unseasonal raining, etc. result in gradual destruction in field activity.
- The farmers are totally dependent on agriculture but some time they face flood problem in their area. Every year flood damage their crop and forces them to work as daily wage workers.

Baksa
- There is no Mandi in the district or in entire state of Assam. The interviewed farmers informed that generally, produce is collected from the field only by various Vendors. A Watermelon producer (having 13 hectares of land) takes watermelon to Guwahati by truck and sells it himself. A dragon fruit producer also sends it to Guwahati. There is no proper market for selling the produced items. Moreover, due to abundance of production in season, proper price is not received by the farmers. For example, the lemon growers hardly get proper price due to abundance of production in summer (50 paisa to 1 rupee per lemon). Sometimes, they get the profit, if one adds the individual labour of the farmer profit is negligible.

Andhra Pradesh

Krishna
- As most of the respondents were small farmers, it is not possible for them to go out for other markets. The crop prices are decided by the government. This means that they sell in lower prices.
- selling at loss
- No self-selling at Rythu Barossa Kendra is possible.

Anantapur
- As the government rate is very less and not viable at par with market, they sell to private merchants. Many cheatings and fraud take place in market yard. Government price is very low and farmers have to pay 2% commission rate to market committees.
• Abnormal crop expenses have increased due to manpower, electricity, diesel consumption, fertilizers as the prices have increased by 80% now but the prices of the crop has not changed.
• The existing storage facilities are very scarce. Sometimes farmers store the crop with them. With lack of proper storage, they cannot store fora long period.
• Central Governments Electronic National Agriculture Market(eNAM), it is an online crop selling portal and tender which is not functioning and therefore unsuccessful.

**Maharashtra**

**Solapur**
• The farmers are often forced to sell their produce for the price range that is present at that particular period of time as thy could not keep the produce with them for long. They did not have a full-fledged storage utility and often stored the grains etc. in their houses for a short time before selling it off. The profit and loss vary as per the prices available for different yields at that particular time. For vegetables and fruits, they have to sell the produce quickly irrespective of the market prices due the inability to store them for a long period.

**Nagpur**
• The farmers sell their produce in the local mandi and/or the nearest market rather than going too far away places to sell. The farmers prefer selling their produces to traders in the markets than selling directly to the consumers. The reason for it being that they get more price for their produce when selling it to the traders than to the customer directly.

**Rajasthan**

**Churu**
• All the farmers had small and marginal landholdings with low quantity of produce. Farmers did not find it feasible to take their produce to mandis and bear the transportation charges when the middlemen in their villages can buy their produce from the land itself. The mandis were 50-60km away from their village. However, the farmers were aware of the difference in prices which they sell their produce and the prices traders/middlemen sell in the markets or to the mills. Local traders/middlemen point out the poor quality of produce as a justification for the low prices. Farmers have no choice as they have no bargaining power. They sometimes receive only one-third of the actual price of their crops. With such low quantity of produce and low income, there is no question of taking the produce to other places.
• This discussion is indicative of the challenges small producers faces as they trap in a vicious cycle of low income and savings, limited information, low economies of scale and logistic issues.

**Pali**
• A majority of the farmers responded that they do accept whatever price they are receiving for their produce even if they are in loss as they have small quantity of produce. As there is no alternative, they do not have the means to carry out cleaning and grading, traveling to mandis and paying for the transportation costs, waiting for their turn to sell in the mandi.
• They calculate the costs incurred for this process and many times, they settle with the prices given by the local traders and middlemen. They do not have to go to the hardship of making these arrangements.
• Price manipulation for crops is very common by the middlemen but the farmers accept it. They need to sell immediately as they need money to repay loans taken for the inputs.
**Uttar Pradesh**

**Meerut**
- The farmers settle for the price that is offered to them, even though they do have some options but then that is a gamble as it would mean to transport the produce to some other location or storing there produce for selling in the future that would mean further costs and there is a possibility that they might not receive a better price.
- Farmers in Meerut do not just sell there produce at the local mandis but also travel to mandis in other towns and villages, and given their close proximity to Delhi they even come and sell there produce at the Azadpur Mandi in Delhi.

**Kaushambi**
- The farmers do not have any option but to settle for the price that they are offered. They do not have an option for storing their produce or selling it in some other place as the expenses that were incurred during the seasons need to be paid.
- The fact that they do not have larger land size that would allow them to store some amount of produce to sell later means that they sell there produce at whatever price that is offered to them.

Q.6. What are the major concerns in storage of farm produce? How are the storage facilities in your district?

**Assam**

**Dhemaji**
- In Dhemaji district, not a single cold storage is available to store the product. This unavailability is a major issue for farmers.

**Baksa**
- No facility for storage (in the Government level or in the private level). There is no cold storage in the area.

**Andhra Pradesh**

**Krishna**
- No godowns for local farmers
- FCI food corporation of India no place for farmers
- No sufficient place for the local crops
- If the fixed rate on the crops is enough, there is no requirement of a subsidy

**Anantapur**
- Warehouses are not available in Anantapur. There are no government cold storage and no warehouses for crops under horticultural.
- Other than horticultural crop godowns, they allow three years only or else 2.5 years have to sell under central government.
- Few state warehouses are available and it is used for civil supply.
- Fruits and vegetable have to be sold in one or two days or it is prone to processing units and cold storages are needed depending upon the crop type facility is needed.

**Maharashtra**

**Solapur**
- There is no cold storage facility accessible for the farmers who were present in the discussion. Additionally, they also said that even if there were they are not able to afford it as it will require them to make payments. Since they do not have large-scale production, it won't be feasible for them to access the storage facilities.

**Nagpur**

200
The major concern regarding storage was the unavailability of sufficient storage units near them. The farmers pointed that they had to sell their perishable produces such as vegetables within a few days as they could not store it by themselves and lacked any cold storage facility. However, they also acknowledged that since they did not have a large-scale production (in which storage facility is extremely essential) the process of storing the produce in storage units is tedious for them. These farmers store their produce apart from perishable produces in their houses or make-shift storages for a certain period before selling them to traders in the market when they get a suitable price.

**Rajasthan**

**Churu**

- As all the farmers were small producers, their produce was either only sufficient for their consumption or they needed to sell it immediately after the harvest due to requirement of money.
- Also, no one knew of a storage facility nearby or if there was, they had no knowledge about it.

**Pali**

- Farmers were not very keen to store their produce after harvesting due to several reasons. There is no surety that after selling the produce after some months that they will benefit by higher prices in market. Going through the process of storage and paying charges for the facility sometime is more strenuous and costly so the farmers prefer to sell their produce.

**Uttar Pradesh**

**Meerut**

- There are many private storage facilities in and around Meerut. There are 4 cold storages around Meerut, however they are privately owned and the storage costs are high, the closest government storage facility is in Hapur offered by FCI.

**Kaushambi**

- Farmers do not produce enough that they would be able to store their produce. Some of the farmers who store their produce do so at home in traditional storage sheds.

**Q.7. As the small Land size is one of the biggest concerns in agriculture, which is not easy to change, what do you think are your alternatives?**

**Assam**

**Dhemaji**

- The members shared that if the income level has increased, farmers have to practice multiple crop cultivation such as horticultural crop, which is indispensable as more benefit cost ration compare to field crops. Considering the small and marginal nature of holding, financial institution such as banks should be hazard free for farmers and implementation of different development schemes should be done in a proper way.
- Farmers can increase their income through horticultural activities like:
  - Increase the area under rice-vegetable by double cropping sequence, introduction of SHC base fertilizer application system of practicing crop, adoption of INM and IPM technology.
  - Introduction of high value vegetables such as Capsicum, broccolis, etc.
  - Establishment of cold storage facilities, increase area under rice-vegetable, black gram/green gram/ sesamum-vegetable double cropping sequence,
• Imparting knowledge and skill through hands-on training and demonstration in situ on organic inputs production and an increase of area under organic cultivation.
• For fruits production, establishment of nursery for quality planting material production and the establishment of mother plant block and identification of mother plant within the district for propagation of good quality saplings.

Baksa
• Farmers are not interested in associations or contract with business. They want to retain their own land, hence, they prefer the better information and optimization of the resources.

Andhra Pradesh

Krishna
Farmer didn’t need any reservation. If he gets reasonable prices for the crop with reference to the cultivation expenditure, he can easily avail the support of Rythu Bharosa Kendra.

Anantapur
• Lots of small-sized land is utilized for dairy products.
• In the past, dairy and cattle farming was subsided. Now, dairy and cattle farmers are turning into daily wage labourers and thus, migration to cities in recent days 10 families went out from the village here the condition is one among every family member is a software employee who is supporting the agriculture family even today farmers are committing suicides last year here 43 members on average of every 8 days 1 is dying
• farmers borrow loans for his livelihood management.
• After waiting for three years for the good price for the crop, he will start selling land to repay the loan Heavy rains, natural calamities after three years here no proper price for example here banana ton is 1500 only.

Maharashtra

Solapur
• The farmers were sceptical about contract farming and not very optimistic about it. They did opine that they expect more interventions from the government in order to help the small farmers survive. A major concern they had was the lack of attention given to them by the bank officials and local government body in addressing their concerns. They do not know the various scheme available to them and often have to resort to moneylenders for their credit needs. They want the process to be very easy and with minimal time consumption.

Nagpur
• The farmers were of the opinion that all the schemes and benefits given to the farmers should be very much user-friendly and hassle free with minimal time consumption. Farmers spend most of their time in their farm land and hence do not have enough time to run behind the schemes and often lose out on the benefits of the scheme as opportunity cost for working in the fields. Few farmers opined that contract farming could be an alternative but there is a risk of exploitation due to the private players involved in contract farming. All the farmers asserted the need to improve the system of providing information and awareness regarding the various benefits of the scheme and any changes or developments that has happened in any scheme. For instance, 3 farmers claimed that their PM KISAN benefits have not been reaching them from the past couple of years because they haven’t done their KYC. They do not know the exact procedure and could not find the time and need to spend a lot of time behind it. One of the reasons
behind this thought process is that the farmers are reluctant to spend a day or more for it as the scheme provides a minimal amount of Rs. 6000 yearly.

**Rajasthan**

**Churu**
- As all the farmers had no knowledge about any farmers groups, after being told its benefits they thought this will address many of their problems.
- Majority of the times they suffer losses while selling their produce in comparison to the cost incurred in the cultivation. Therefore, all the farmers wanted remunerative prices for their produce.
- Crop losses due to natural calamities affect their economic conditions and seldom do they receive the insurance claims from PMFBY. Better and transparent claim settlement is very important. Many of the farmers receive no insurance claims in the last two years which was a huge disadvantage.

**Pali**
- Farmers were aware of the challenges they face due to small landholding size and low quantity of produce; therefore, they consider that they should have adequate support for farming activities and should not suffer losses.
- Better and timely availability of seeds will be very beneficial. Sometimes the cooperatives societies and government stores have limited stock of seeds and fertilisers leading farmers to buy seeds with higher prices or use the old ones.
- KCC is a good source for credit for farmers. However, those farmers who require lesser amount of credit demands that the application, renewal should be made easier. Many of the farmers stopped taking money under KCC scheme due to the hassle and are taking credit from cooperative societies/bank due to its flexible and easy procedure.

**Uttar Pradesh**

**Meerut**
- Joining an FPO like organization or forming some sort of an understanding among the neighbouring farmers to not only produce the same commodity but also to sell the commodity together in order to get a better price.

**Kaushambi**
- Some government policies that would help the farmers with small land sizes like interest free loans, free electricity and water would help elevate some of the problems for small farmers.

**Q.8. What are some areas where you require support from the government and in which form?**

**Assam**

**Dhemaji**
- The farmers of Dhemaji district required:
  - Training on scientific and technical knowledge
  - Fixed asset support
  - Bank loan support
  - Storage facilities
  - Processing unit to produce finished product
  - Introduction of Gitesh variety as continent crop
  - Introduction of medium duration HYVs to fetch the rice base cropping sequence
  - Introduction of short duration HYVs for pre and post flood situation
• Improvement in cultivation practices
• Rice-based double cropping sequence
• Skills on certified seed production
• In Dhemaji District farmers have opportunities to increase their income level such as accessible to nearby market of other district and state of Arunachal Pradesh, well connected Road connectivity and potential area for Double cropping

Baksa
• Marketing of products, soil testing, micro irrigation, interdepartmental coordination, organic fertilizer, subsidies.

Andhra Pradesh

Krishna
• Rate fixation by farmer without any involvement of middleman is an area where support is needed.
• With the help of online billing and e-crop registration, or the linking of EKYC for estimation to take from farmers, the government should give farmers the freedom of selling for reasonable price.
• Though it was registered as e-crop, to sell the crop serial number will take a long time in order to come to accept the crop. In between brokers are dealing with the farmers price fixation
• The farmers listed the following needs: free market, original seeds, fertilizers, water facilities, high quality pesticides and selling at the same price as the government pays for crop.
• They also expressed a need for space for cold storage facilities.

Anantapur
The following areas were identified where the farmers require support:
• Investment support,
• Less price on fertilizers
• If the input cost increases, automatically, the output crop cost should be increased
• control of duplicate seeds and pesticides
• Quality control by government
• Swaminathan Committee recommendations should not have to be followed.
• Apply these zero interests up to one lakh depending upon the land capacity and crop fix the assurance amount. It should be increased stable the interest rate 25 Paisa maximum limit should be increased
• Need agricultural scientist to one manual or right to Rythu Barossa Kendra
• Seeds estimation and limit them to requirement.
• 100 TMC water was wasted to sea needs storage dam here
• Hidriva project extension needed
• Farmer need a parliament act to fix prices.
• Many farmers suicide in Anantapuram history, so, clearing the bank loans and providing government jobs to family members of the deceased is the least the government should do to look after the families.

Maharashtra

Solapur
The three farmers were not getting PK KISAN benefits which was a concern for them. The farmers also wanted the loan for small farmers to be interest free and hassle-free. The farmers want the
government to ensure that the banks are approachable for them and that they should work to ensure that the benefits are reaching the farmers.

**Nagpur**
- The farmers wanted the subsidy on loans to be increased further. A few farmers also put forth their requirement of interest-free loans for small and marginal farmers. All the farmers in the discussion flagged the increase in the cost of fertilizers affecting their expenditure incurred. They suggested that the fertilizers should be made more affordable than the current state so that farmers are in a position to afford them at nominal rates. Another suggestion was to make PM KISAN instalments monthly and increase the instalment amount to of Rs. 6000 per month than the existing plan of the scheme.
- The farmers also had a suggestion for insurance segment. They opined that the insurance should not get privatised instead it should remain public. They also added that they have seen instances where the compensation claims were not resolved and/or given properly for other few farmer acquaintances which further discourages them from applying.

**Rajasthan**

**Churu**
- The farmers in the villages are largely dependent on rainfall for irrigation. In case of droughts, there are no avenues for irrigating their lands which results in crop losses. Government support for irrigation was one of major requirements from the farmers.
- Massive information asymmetry among farmers about schemes. Awareness campaigns should be organised for information about schemes and policies.
- Farmers were largely satisfied with the credit under KCC but suggested that the renewal and application process can be made simpler. Sometimes the bank officials are unresponsive to farmers requests and it takes lot of time in application process which should be improved.

**Pali**
- Interest rates should be lower for farmers with lesser requirement of credit. Bank officials and local government officials should extend support to farmers with less information under KCC scheme. Familiarity with banks officials is important to take benefits under the scheme.
- The prices for crops should be increased to ensure better prices for farmers.
- Support for irrigation is important as the majority of farmers are dependent on rainwater.

**Uttar Pradesh**

**Meerut**
- It was pointed out that low interest loans and easy loan process are their major concerns. The process of applying for loans should be made easier or help should be provided that can help them go to the bank less often, and the interest rate on the loan amount should be lowered some even pointed out that there should be no interest rate at all.
- The high prices of farming related activities like seeds, fertilizers, irrigation, was another concern the farmers had.
- Crop destruction due to animals like cows is also another problem in the area. Help from the government to either relocate the animals or financial support to the farmer affect by it would be helpful.
- Also, a few farmers pointed out that low prices for their produce is also an issue and so some way to make sure that they receive a fair price.

**Kaushambi**
Farmers wanting to start a small business should be able to get low interest personal loans to do so. Low interest loans for buying and taking care of animals should also be provided.

Q.9. What is the process of joining an FPO?

Assam
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Andhra Pradesh
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Maharashtra
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Rajasthan
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Uttar Pradesh

Meerut

• The farmers were not aware of any process of joining the FPO. For them to become a part, they had to pay Rs. 2000 to avail some basic benefits.
• For them joining an FPO is not becoming a part of a cooperative like organization that will benefit you in the long run and will also give you a voice, for them it is like a membership to a club through which they can get cheap and good quality fertilizer and pesticide.

Kaushambi
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Q.10. How did you get to know about the FPO?

Assam
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Andhra Pradesh
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Maharashtra
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Rajasthan
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Uttar Pradesh

Meerut

• The farmers were approached by the CEO of the FPO who explained to them certain benefits of joining the FPO.

Kaushambi
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Q.11. Did you apply for a loan as part of the FPO? If yes, how much loan did you get as part of the FPO?

Assam

Andhra Pradesh

Maharashtra

Rajasthan

Uttar Pradesh

Meerut
As explained before, they were not aware about majority of the benefits that come as being a part of the FPO; applying for loan as an FPO was one of them. They have not applied for a loan as an FPO yet.

**Kaushambi**

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Q.12. **What activities have you performed as part of an FPO?**

**Assam**

**Andhra Pradesh**

**Maharashtra**

**Rajasthan**

**Uttar Pradesh**

**Meerut**

- This FPO is not very old it has only been a year since it was formed. So far, they have not even started selling their produce as an FPO. Therefore, not many activities have been performed as being a part of the FPO.
- Currently, the FPO is in the process of arranging a storage space for their produce and also buying a tracker that can rented out to the members of the FPO at cheaper than the market rate.

**Kaushambi**

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6. 4 Lead District Manager (LDM)

**Credit**

Q.1. **What are the different long term loan options available to farmers for investment in fixed productive assets?**

**Assam**

**Dhemaji**

In Dhemaji, about 85% of population is dependent on farming however very few of the farmers are availing some long-term loans as AIF (Agriculture Infra Financing Facility), KCC (Kisan Credit Card) or personal loans. These loans can be used by the farmers to buy agricultural machinery, setup cold storage, or set up animal husbandry practice.

**Baksa**

One of the major long term loan options that are available to the farmer is tractor loan. Last year about 7 Tractor loans were sanctioned by the bank, however, all of them are NPA now. This means that none of the farmers that took loans for tractors paid it back.

**Andhra Pradesh**

**Krishna**

Following are the different crop loan options available to farmers:

- Agriculture term loans,
- Land development loans,
- Irrigation loan,
- Farm mechanization loans,
- Tractors, and harvesters’ loans etc.
Anantapur
They are two types of loans given to the farmers based on requirement:
- First one is related to land development.
- The second one is infrastructure loan, which includes tractors and other agricultural equipment.

Maharashtra
Solapur
- Under priority-sector lending, farmers have a variety of long-term credit options, including investments in fixed assets credit for farm mechanisation, such as the purchase of tractors and farm implements, starting a new plantation or horticulture plantation, irrigation needs, such as the installation of drip or sprinkler irrigation systems, building of wells, etc., and land-levelling needs.
- The term loans have a repayment period of more than 5 years. Farmers can also get credit under agricultural ancillary operations like building post-harvest infrastructure such as cold storage units, processing units, godowns, etc.

Nagpur
- Term-loan facility offer loans with repayment facility of 5-7 years is given to farmers for purchase of fixed assets including construction of wells, warehouses etc.
- Term-loans are given under KCC as well.

Rajasthan
Churu
Under KCC, the long-term loan facility is available for farmers for investment in fixed assets.
Pali
A farmer is eligible to borrow between Rs. 7.5 lakh and Rs. 12 lakhs for a term of 7 years at a 10% interest rate. However, not all farmers are eligible for this programme.
- Under KCC, apart from short term crop loans, the long-term loan facility is also available for farmers for investment in fixed assets.
- Only the farmers with better repayment history are eligible for this.

Uttar Pradesh
Meerut
A long term loan option that is available to farmers is Kisan Overdraft (KOD).
- A farmer can take a loan amount of about 7.5 lakh to 12 lakh, at an interest rate of 10% for a period of 7 years.
- However, this scheme is not available to all the farmers, to qualify for this scheme a farmer must be part of KCC and must also have a good credit score and must pay all their KCC loans on time.

Kaushambi
- A long term loan option that is available to farmers is land stabilization loan.
- A farmer can take a loan amount of about 5 lakhs to 12 lakhs, at an interest rate 10.5% for a period of 3 to 7 years.
- This loan is availed for things like irrigation set up, post-harvest activities like building up of personal storage set up, buying machinery like trackers (it is a very popular loan for this particular activity), or even starting a small agriculture related business

Q.2. Should long term loan options for farmers be promoted? And why?
Assam
Dhemaji
• Banks are doing everything in their power from timely KCC loans for the promotion of long-term loan options and some of the farmers are availing these benefits through schemes like Agri Sector Infrastructure and Fund Sector Development, however majority of the farmers are not interested in long term loan options.

**Baksa**

• Even though tractor loans given to the farmer recently have not performed well but given the financial condition of the farmers, and the fact that the farmers have to deal with crop failures due to the changing climate and the rise in prices, long term loan options should be promoted.

**Andhra Pradesh**

**Krishna**

• Long term loan option are available to the farmers at the Rythu Barossa Kendra and the same will be valid by the farmers who have assets.

**Anantapur**

• Long term loan options should be promoted.
• Compulsory promotional activities should be taken care of by the banks.
• Farmers need to be made aware of the benefits and the requirements, as long-term loans have higher interest rate.

**Maharashtra**

**Solapur**

• Promotion of long-term loan is important as there is a considerable gap in the infrastructure
• This will also reduce the infrastructure gap which has always been a concern.
• The government schemes have been creating a positive impact among the farmers, encouraging them to take investment credit for the development of infrastructure.

**Nagpur**

• The LDM believed the need for promotion of long-term loans may vary from case to case.
• The uptake of such loans should be promoted among farmers who want to take credit for investment purposes and have a good repayment history and repayment capacity.
• Long-term loans, if promoted among every farmer, then it may turn counterproductive. For instance, a small farmer takes long-term loan, as there may not be a requirement of that much amount of loan as well as the repayment capacity and security.

**Rajasthan**

**Churu**

The LDM did not have any new points to add.

**Pali**

• Investment in fixed and productive assets can be beneficial for long term sustainability in farming.
• The inadequacy of irrigation facilities is a major challenge for farmers so there is need for investment in them.

**Uttar Pradesh**

**Meerut**

• Long term loans options should be promoted and banks set up regular camps to promote it.
• However short-term loan options like KCC are more popular as the interest rate is less than that of KOD.
• Long term loan options should be promoted because if a farmer takes long term loan for irrigation or any other agriculture related activity then his yield will improve, in case of irrigation set ups a farmer’s dependence on rain becomes less.
• Banks on a regular basis set up to camps (one in Rabi & and one is kharif) to promote credit options to farmers. However, these camps happen at a specific location and not all farmers are able to attend them.
• What is required is grass roots level promote, but banks are not able to do so due to staff shortages and so the agriculture department needs to take the initiative. 95% of farmers are already a part of KCC.

Q.3. What is the uptake level of the long-term loan facility under KCC for investment in fixed assets for farmers?
**Assam**
**Dhemaji**
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**Baksa**
There is no provision for long-term loans in fixed assets under KCC.
**Andhra Pradesh**
**Krishna**
The LDM did not have any new points to add.
**Anantapur**
The LDM did not have any new points to add.
**Maharashtra**
**Solapur**
- There has been a good uptake of long-term loan among farmers.
- There was a decline in the uptake in the past 2-3 years but after the launch of Government sponsored schemes like Agriculture Infrastructure fund, Pradhan Mantri Formalisation of Micro Food Processing Enterprises (PMFME) Scheme, Agriculture Marketing Infrastructure along with state-government sponsored schemes such as the Mukhya Mantri Anna Prakriya Yojana (Chief Minister Agro and Food Processing scheme) provides subsidies which encourages the farmers to take long-term loan facility.
- The LDM and DDM has a quarterly review meeting with the bankers at block level and the District Level Consultative Committee is set up at district level which reviews the ground level credit dispensation in the district including the agriculture investment credit on a quarterly basis. This committee also contains members from other central and state government departments and the status of all schemes are reviewed in this meeting.

**Nagpur**
- There has been a good uptake in the long-term loan facility in the district of Nagpur.
- Approximately 70% of the loans disbursed were long-term loans and the remaining were short-term loans.

**Rajasthan**
**Churu**
The LDM did not have any new points to add.
**Pali**
Only large-scale farmers or traders are availing loans while small farmers are not able to avail them.

**Uttar Pradesh**
**Meerut**
The long-term loan option of KOD is very popular amongst farmers that want to avail long term loans.

**Kaushambi**
Due to small land sizes in the district long term loans are not a popular option. Majority of the farmers tend to rent any form of equipment that might be needed.

**Q.4. What are the reasons for low interest in loans for long term investment amongst farmers?**

**Assam**

**Dhemaji**
Following are few of the reasons for a lack of interest in long term loan options:

- There is a lack of awareness among farmer of not only long-term loans but also KCC.
- The farmers that are aware about it have a hard time fulfilling the terms and conditions of getting the long-term loans.
- In majority of the farmers it has been observed that there is minimal interest in long term loans.

**Baksa**

- Farmers are not receiving any new credit options, and the bank is only renewing their earlier KCC.
- KCCs are popular among farmers because they do not require collateral or security for loans up to Rs. 1.5 lakhs, but long-term loans may require collateral or security in the form of land or other assets.
- The reliance on renewals of KCCs may limit farmers’ access to long-term credit facilities and hinder their ability to invest in agricultural activities that require higher capital.
- Fund diversion through KCC loans is also a matter of concern, as some farmers invest in non-agricultural activities such as piggery and fishery.
- Policymakers and financial institutions should design credit facilities that cater to the diverse needs of farmers and implement measures to prevent fund diversion and promote the efficient use of credit to ensure the growth of the agricultural sector.

**Andhra Pradesh**

**Krishna**

- The LDM did not have any new points to add.

**Anantapur**

- It involves high expenditure like legal report, property land documents, validation report, project report and GST quotation, invoices, land mortgage charge.
- Another reason is that there is no guarantee of yield or return of the crop. Farmers alone cannot afford the expenditure of long-term loan.

**Maharashtra**

**Solapur**

- There was a low uptake of long-term loans among farmers 2-3 years ago though now it has improved and there is a good uptake level.
- The lack availability and knowledge of government sponsored schemes might be the possible reasons for the low-interest among the farmers.
- In the recent years the government sponsored schemes have increased at both central and state level this has resulted in an increase of interest among the farmers in taking investment credit.
**Nagpur**
- The small farmers generally prefer to avail short-term loans and crop loans over long-term loans as they are themselves aware of their need for credit and repayment capacity.
- Long-term loans are generally preferred by big farmers as they require tractors, machineries, warehouses etc., and the trend shows good uptake on the same.
- The small farmers are also reluctant to take formal credit irrespective of it being short-term or long-term as their land document (7/12 extract) will then show the land as land having credit which limits the prospect of sale for that piece of land.

**Rajasthan**

**Churu**
- The LDM did not have any new points to add.

**Pali**
- Farmers in Pali are not very affluent. Due to extreme weather condition such as droughts affecting the crops and lack of irrigation facilities, farmers are barely able to meet the crop expenses.
- The banks are not able to provide these loans due to current financial situation of farmers.

**Uttar Pradesh**

**Meerut**
- Long term loan is not very popular among farmers for a very simple reason that KOD must compete with KCC.
- KCC might be a short-term loan but farmers prefer that as it means that they will not be paying an instalment on the same loan for a long time.
- KCC offers lower rate of interest than KD and there is also interest subvention under KCC which is not available under KOD.

**Kaushambi**
- Long Term loan option is not very popular amongst farmers because the farmers in the district do not want to pay instalments for a long time.
- The instalments need to be paid twice or four times a year, something a farmer cannot afford.
- There also the fact that there is no interest subvention in the long-term loan option like KCC.

**Q.5. What do you think could be done to improve the credit accessibility of farmers?**

**Assam**

**Dhemaji**
- Improving credit accessibility for farmers involves several key steps that can be implemented to ensure that farmers have access to financial resources they need to grow their businesses. Here are some of the most important measures that can be taken:
  - Increase technical and documentation awareness: Farmers need to be aware of the various documents and technical requirements that are necessary for securing a loan. This includes educating farmers on the importance of maintaining accurate records and documentation, as well as providing training on how to properly complete loan applications.
  - Streamline loan disbursal process: Farmers often need quick access to funds to cover operational expenses, so it is important to ensure that loans are disbursed in a timely manner. This can be achieved by using technology to automate the loan processing and approval process, as well as by reducing bureaucratic hurdles and paperwork.
- Provide flexible loan terms: Farmers have unique needs and financial situations, so it is important to offer loan products with flexible terms that can be tailored to their specific circumstances. This could include variable interest rates, flexible repayment terms, and the ability to adjust loan amounts based on changing business needs.

- Ensure proper maintenance of land documents: To secure a loan, farmers need to provide proof of land ownership or lease agreements. It is important to ensure that land documents are properly maintained and kept up-to-date, so that farmers can access credit when they need it.

**Baksa**

- Loans should be sanctioned by the banks in a timely and hassle-free manner.
- Farmers need to be encouraged to avail PMFBY scheme, and also made aware of its benefits.
- Inter-departmental coordination needs to improve. The coordination and communication between the bank, agriculture department and the deputy commissioner’s office need to be better in order to better serve the farmers.
- There is a lack of awareness about the importance and the necessity of CIBIL scores and how that can be improved. If the awareness among farmers can be improved that would not only help them get loans at better interest rates later but also reduce the NPAs.

**Andhra Pradesh**

**Krishna**

- The LDM did not have any new points to add.

**Anantapur**

- The loan procedures should be made hassle free and the procedure should be made easier to improve access to credit.

**Maharashtra**

**Solapur**

- Measures such as promotion & publicising the various Government Sponsored Schemes (Central & State Govt.) available for farmers, should be made available. These will improve the credit accessibility of farmers.
- E.g. – Recently launched Agriculture Infrastructure Fund (AIF) & Prime Minister Formalisation of Micro Food Processing Enterprises (PMFME) by Government of India are really helping local farmers in building agricultural infrastructure.
- Having said this, it is also important to note that Solapur has around 6,00,000 farmers but not everyone of them requires credit. Also, the proportion of small and marginal farmers is higher, especially the marginal farmers with less than 1 Hectare of land. For them it is difficult to avail loans that require collateral. Even for KCC, due to their small size of land, the amount of loan that will be sanctioned to them will be very minimal around 15,000-20,000 and the farmers do not go through the entire process of taking credit for receiving such small amounts of loan.

**Nagpur**

- Awareness among the farmers about the benefits of the various schemes available for them will encourage more farmers to avail institutional credit.
- The farmers should not find the process for availing credit cumbersome.
- They are not willing to leave their work on the farms and visit banks in order to get credit.

**Rajasthan**

**Churu**
• The official opined that majority of farmers are aware of the schemes and are availing benefits of the credit schemes.

Pali
• The access to credit for farmers through KCC is satisfactory however some small producers still face issues such as procedural or technical problems in the application process.
• There needs be extra efforts from banks and local government officials to encourage farmers to take institutional loans.
• The application process should be made easier for farmers with smaller loan amount requirement.
• There is no issue in awareness about credit scheme among farmers and banks are also extremely helpful in the process.

Uttar Pradesh
Meerut
• Majority of the farmers in the district already have access to credit and avail KCC; and few farmers also use KOD.
• So, most of the district already has access to credit, but to get more farmers to get institutional loans one thing that could be done is the process could be made simpler and the loan amount could be made available faster.

Kaushambi
• Over 95% of the farmers already know about or avail or have availed KCC. So, there is no issue of access to credit. Farmers prefer KCC.
• The fact that there is no collateral for loans below 1.6 lakhs also makes it popular.

Q.6. Do you think fragmentation of land is a challenge for farmers to obtain a sufficient amount of credit? Also, do you believe that credit should not be given to farmers on the basis of land ownership but on the basis of income range?

Assam
Dhemaji
• Land fragmentation is a significant challenge for farmers seeking to obtain agricultural loans. Loans are not given on the bases of income but rather on the bases of size of land and type of crop grown, and so due to farmers that have small lands, tend to get small amounts of loans that are not enough to meet their needs.

Baksa
• Fragmentation of land is a major challenge not only in Baksa but also maybe the whole country. The land sizes in Assam were not that large to begin with however over time, land sizes have only reduced, this creates issues for the farmers to get decent amounts of loan for farming.

Andhra Pradesh
Krishna
• Credit should be given based on land ownership but not on the basis of income range.
• Recovery of loans is easy when farmers have land or assets, if it is based on crop returns it will not be assured.

Anantapur
• Each and every loan component should be based on actual expenditure that will be incurred by the actual scale of finance available to the crop cultivation.
• The purpose should be to survive if we give loans based on income.
**Maharashtra**

**Solapur**
- Yes, fragmentation of land is posing a challenge for farmers to obtain enough credit.
- It is observed that although, Scale of Finance (SoF) is being fixed per acre/per hectare basis for all major crops grown in the district and there is no barrier of providing KCC crop loans to small & marginal farmers (land holding <2 Ha) & availability of ‘Fexi KCC (₹ 10,000/- to ₹ 50,000/-)’, but still such farmers are not getting/not availing crop loans from banks. Further, large numbers of small & marginal farmers are also not getting Medium/Long Term Loans due to lack of collateral securities.
- At present, as per RBI extant instructions, collateral free loans up to ₹ 1.60 lakh are available for farmers. For loans above this limit, farmers have to give sufficient collateral securities as per banks’ individual policies. While sanctioning loans to the farmers, banks are fixing credit limits particularly for MT/LT agri loans based on land holding, crop grown, income, etc.
- Landless farmers can get credit facility through group mode i.e., Joint Liability Group (JLG) mode of financing. Even such landless farmers including Tenant/Oral lessees’ farmers can avail KCC crop loans through JLG mode.

**Nagpur**
- Yes, fragmentation of land is a challenge for the farmers in obtaining sufficient credit.
- One of the reasons why the farmers feel discouraged to avail formal credit such as KCC is due to the minimal amount of credit they receive after having gone through the complete procedure for availing loans, including arranging all the required documents and multiple visits to the banks.
- A small farmer on an average gets Rs. 15,000 - Rs.20,000 of crop loan sanctioned after all the calculations done as per the Scale of Finance guidelines of RBI due to their small size of land. This is a very meagre amount for the farmers and hence, the farmers are discouraged from taking formal credit.

**Rajasthan**

**Churu**
- KCC should be made income based.

**Pali**
- The income of farmers is determined by their size of their land.
- The repayment capacity of farmers depends on their income.
- The loan amount is calculated according to expenses incurred by farmers in farming activities so size of land is a suitable determinant for agri-credit.

**Uttar Pradesh**

**Meerut**
- The LDM was not sure about this question. and was not aware about any such issue in the district.

**Kaushambi**
- If the land size is not big enough, then the loan amount would also be not that big.
- However, given the fact that the land is small the loan amount that is issued on that piece of land would also be enough.

**Q.7. How is Scale of Finance (SOF) a factor in estimating the loan amount for KCC?**

**Assam**

**Dhemaji**
• The SoF is determined at the district level by the District Level Technical Committee.
• The SoF is determined on the basis of the cost of cultivation in a particular year.

**Baksa**
• When it comes to the calculation of the loan amount, income of a farmer is not quantifiable for a particular crop. The major things that are taken into consideration in the calculation of the loan amount are age of a farmer, type of crop, land size etc.

**Andhra Pradesh**

**Krishna**
• The SoF is calculated at the district level, usually an estimate is taken from the previous year’s KCC amount.

**Anantapur**
• At the district level, the DLTC collects all the necessary information and sends it to the SLBC, which then on the bases of that information determines the SoF.

**Maharashtra**

**Solapur**
• Scale of Finance is calculated as per the RBI guidelines.
• It is the basis on which the loan amount is calculated for the farmers. Each crop has a value which is estimated every year after consultations and discussions with the district-Level Technical Committees and State Level Technical Committee.
• This process involves consultation with the Agriculture Departments as well as farmers. The SoF calculation depends on factors such as type of crop grown, area of land for cultivation, irrigation facility. If a farmer has an irrigated land and proposes to grow high value crops then he will be getting more amount of loan.

**Nagpur**
• Scale of Finance is the basis on which the loan amount that an applicant farmer is eligible for is calculated.
• It is calculated as per the guidelines issued by the RBI. The SoF is revised every year after considering inputs from the State Level Technical Committees and the Agriculture Department as well as the farmers.

**Rajasthan**

**Churu**
The LDM did not have any new points to add.

**Pali**
• The scale of finance is calculated by the district level committees after taking in consideration the money spends on inputs, harvesting, labour etc.
• This amount is reviewed by authorities and the banks follow the SOF to determine the loan amount given under KCC.

**Uttar Pradesh**

**Meerut**
• SoF is the most important factor in determining KCC. and they follow the RBI guidelines to calculate KCC.

**Kaushambi**
• SoF is the most important factor in determining KCC. and they follow the RBI guidelines to calculate KCC.

**Q.8.** NABARD is of the opinion that the One State One Scale of Finance Model will be beneficial. How easy or difficult is it to make SOF uniform across districts to provide better
benefits to farmers in KCC loan amounts to maintain ease of understanding and procedures?

**Assam**

**Dhemaji**
- A single SoF for the whole state is not a feasible option as cropping patterns, standard of living and cost of production vary from district to district. In order to have a better and fair assessment of the loan amount, the SoF needs to determine at the district level.

**Baksa**
- The SoF is decided by the SLBC

**Andhra Pradesh**

**Krishna**
- A state level SoF would be a better. A simplified approach to do it is necessary. Same rule for all the crops in all the districts would avoid any confusion that the banks might have.

**Anantapur**
- A state level SoF is better as the SLBC tends to fix the SoF on the higher side, which is more beneficial for the farmer.

**Maharashtra**

**Solapur**
- It is better if the SoF is different for different districts. Implementing One State One Scale of Finance will be helpful for easy procedure and decision making but it should meet the regional variations that will be otherwise addressed in district-wise SOF.

**Nagpur**
- Maharashtra currently follows different SoF for different districts but a uniform SoF will be beneficial only if the regional variations are addressed properly.

**Rajasthan**

**Churu**
- There are different climatic conditions and nature of soil therefore, Scale of Finance should be decided at a district level. It is not possible to decide SoF at the state level.
- Sometimes there is different condition within a district. For example, for irrigation which determine the productivity. Some areas have good source of irrigation, some do not which affects the farmers’ crop productivity.

**Pali**
- The farming and weather conditions differ from district to district. So different SOF in different districts is a better method.
- Many districts might be at loss if there is a uniform SOF for all crops across all districts in a state.

**Uttar Pradesh**

**Meerut**
- SoF in UP is already at the district level and it should stay the same.
- SoF might not be calculated at the district level but it can be calculated based on different agro-climatic zones. But a SoF at the state level would not work especially in a state like UP.
- The DDM also pointed out that NABARD is not of this opinion but rather NABARD was told to have this opinion.

**Kaushambi**
- This is not possible. Due to different agro-climatic zones SoF should be district wise.
Q.9. Does the bank prefer to give loans to farmers with land in order to have assurance of repayment?

Assam
Dhemaji
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**Baksa**
- Banks do prefer to give loans to farmers with land over tenant farmers.

**Andhra Pradesh**

**Krishna**
- Banks prefer to give loans to farmers with land/assets in order to have assurance of repayment. Because return on crop is very uncertain.

**Anantapur**
- There is no preference given to farmers with land. Even tenant farmers are provided with KCC loans. Tenant farmers are given loan of up to Rs. 2.5 lakh.

**Maharashtra**

**Solapur**
- There is no such preference from the public banks or cooperative banks. Private banks may have certain biasness for giving loan to small or landless farmers.

**Nagpur**
- This trend is observed in the private banks where the banks have set some parameters and criteria to give loans to farmers and ask for security, to give loans to the borrowing farmers. Public banks generally do not ask for any such collateral and adhere to the guidelines of the RBI.
- The public sector banks have a bigger responsibility in providing loans to the farmers and meet their PSL target than private banks. Even the farmers prefer to approach public banks over private banks for government schemes.
- Cooperative banks’ performance has weakened in the recent years. Commercial banks have been the most preferred banks by farmers presently.

**Rajasthan**

**Churu**
- Banks have no preference to large farmers. All farmers receive KCC loans according to their land size.
- There are very few cases of KCC among tenant farmers as the landlord has already taken KCC loan on the lands. No JLGs groups are there in districts. No farmers groups for farmers according to the official's knowledge.

**Pali**
- Banks do not differentiate based on a farmer’s land size. All farmers applications are assessed in a transparent manner.
- Although there are minimal farmers groups with tenant or landless farmers who apply for loans.

**Uttar Pradesh**

**Meerut**
- Yes, farmers with land are given more preference over landless or tenant farmers, however landless farmers are offered KCC tatkal over regular KCC.
• There is no difference between farmers with land and landless or tenant farmers. Infect, it has been observed that tenant farmers tend to be more regular when it comes to repaying the loans over farmers with land.

Q.10. Is there a practice of requiring collateral for loans less than Rs 1.6 lakhs? Or banks keep a mention of the loan in land documents (Khatuani) of farmers for the record?

**Assam**

**Dhemaji**
• There is no requirement of collateral for loans less than Rs 1.6 lakhs.

**Baksa**
• The KCC loans are given according to the RBI guidelines and no collateral is required by the banks for a loan of less than Rs. 1.6 lakh.

**Andhra Pradesh**

**Krishna**
• The banks do not ask for collateral for loans less than Rs 1.6 lakhs.

**Anantapur**
• The banks do not ask for collateral for loans less than Rs 1.6 lakhs.

**Maharashtra**

**Solapur**
• The banks are required to follow RBI guidelines strictly. Also, the farmers are nowadays aware about the criteria so it is not possible for banks to exploit the farmers.

**Nagpur**
• The banks do not ask for collateral for loans less than Rs 1.6 lakhs. However, a few such incidents may have occurred in private banks. The farmers have become more aware of the rules than before and as a result do not fall prey to such demands by the banks.
• Banks do keep a mention of loan in the land documents which acts as a problem for the farmers as this limit their sale prospect for that land.

**Rajasthan**

**Churu**
• There is no collateral requirement for KCC loans up to Rs. 1.6 lakh. Hypothecation of crops are done for the loans as security but it is not considered as collateral.

**Pali**
• The banks do not ask for collateral for loans less than Rs 1.6 lakhs.
• The banks do not ask to see the land documents for loans less than Rs. 1.6 lakhs.

**Uttar Pradesh**

**Meerut**
• RBI guidelines are followed and no collateral is taken for loans less than Rs.1.6 lakh. Land records or khatuani is not maintained for any loan less that Rs. 1.6 lakh.

**Kaushambi**
• RBI guidelines are followed and no collateral is taken for loans less than Rs.1.6 lakh. Land records or khatuani is not maintained for any loan less that Rs. 1.6 lakh.

Q.11. Are the farmers aware about Prompt Repayment Incentive (PRI)?

**Assam**

**Dhemaji**
• Majority of the farmers in Dhemaji are not aware about Prompt Repayment Incentive (PRI).
**Baksa**
- Majority of the farmers in Baksa are not aware about Prompt Repayment Incentive (PRI).

**Andhra Pradesh**

**Krishna**
- As the scheme has been in use since 1998, farmers are aware of all the different aspects of KCC including PRI.

**Anantapur**
- Farmers are very aware of PRI and any other scheme related information.

**Maharashtra**

**Solapur**
- The awareness is moderate. Many small farmers are not aware about the Scheme completely. Medium and big farmers are much more aware than small and marginal farmers.

**Nagpur**
- The overall awareness among the farmers on PRI is low. There is no receipt of any complaint or issue from the farmers related to PRI which indicates that the farmers are not very attentive about the receipt of PRI.

**Rajasthan**

**Churu**
- There is very high level of awareness about PRI and all the benefits among farmers. Farmers nowadays get to know about schemes and benefits through their friends and family. There is absolutely no issue of awareness about KCC among farmers.

**Pali**
- There is a high level of awareness about KCC and its benefits like PRI.

**Uttar Pradesh**

**Meerut**
- Yes, farmers are aware of PRI. The NPA rate of the district is about 3%.

**Kaushambi**
- Not all farmers are aware about PRI, however majority of the farmers are aware about it. 70% of the farmers know about PRI very well.

**Q.12. Do farmers divert KCC loans to various purposes, or is it fixed in the loan document and in practice?**

**Assam**

**Dhemaji**
- Some farmers divert KCC loans for various purposes, and due to it they face problems during the repayment of the loan.

**Baksa**
- In Baksa, diversion of KCC funds is done by farmers.

**Andhra Pradesh**

**Krishna**
- 50% of the loan amount is used completely towards farming and farming related activities. The other 50% can be diverted towards various personal expenses.
- It is not fixed to loan documents in practice. But it is different on the basis structure.

**Anantapur**
- Farmers do divert their loan amount as there is no way for the bank to monitor how the loan amount is used.
Maharashtra
Solapur
- There may be some diversion that is existent among the farmers but it is not a major concern currently.

Nagpur
- The KCC loan amount does include 10% of the loan for the post-harvest expenses and consumption needs of the farmer but the farmers may exceed the 10% limit that is provided for consumption needs.
- There is no end-use verification possible for the bankers to ascertain where the farmers use the entire loan amount.
- Generally, the farmers withdraw the entire loan amount in a single time as they prefer to make cash payments. The NPA rate for the district of Nagpur is 17% as on 30 September, 2022 for the long-term and short-term loan segments together.

Rajasthan
Churu
- The LDM did not have any new points to add

Pali
- In some cases, farmer do utilise crop loans for other purposes.

Uttar Pradesh
Meerut
- There is some loan diversion that takes place however it is very limited and not very high.

Kaushambi
- It is not to say that there is no loan diversion. However, more than 90% of the farmers do not divert their loan amounts.
- For the purpose of monitoring that the KCC loan amount would be paid back upon official bank visits by the farmer on a regular basis to make sure that the farmer is farming and will be able to pay back the loan.

Q.13. What do you consider are the structural challenges of the KCC scheme?

Assam
Dhemaji
Following are some of the structural challenges in the KCC Scheme:
- Farmers do not have clear land record,
- The loan process is lengthy which is problems for seasonal crop.

Baksa
Following are some of the structural challenges in the KCC scheme:
- High number of NPAs,
- Diversion of KCC loan

Andhra Pradesh
Krishna
- KCC is a good scheme, and there are no structural changes that need to be made.

Anantapur
- The KCC scheme is a very good scheme and does not have any structural issues.

Maharashtra
Solapur
- Methodology for fixation Scale of finance for each crop needs to be uniform.
• Private banks are not adhering to the scale of finance fixed by the district level technical committee (DLTC) and disbursing higher crop loans than that of SoF.
• Almost all banks are transferring KCC crop loan amounts to saving bank accounts of farmers, which has resulted in very low level of use for the Rupay KCC Card.

Nagpur
There are a few challenges about the KCC Scheme.
• Firstly, loan waivers have been hampering the credit discipline of the farmers. The farmers purposely default their repayment hoping that their loan will be waived off in future.
• Secondly, there have been cases where the farmers propose a high-value crop to cultivate on their land while applying for the loan but grow a different crop during the time of cultivation. This is done because a high-value crop will give them more amount of loan. End-use verification of short-term loan or crop loans is not possible for the banks as easily as its possible for them to verify the usage of long-term loan facility.
• Thirdly, the procedure of charge noting on the 7/12 extracts of the land discourages the farmers from opting for loan.

Rajasthan
Churu
• Many farmers do not repay their loan under the hopes of getting a loan waiver. However, these trends differ district-wise. In Churu, the repayment trends are very good.
• Political promises for loan waiver must be stopped. It is creating bad financial discipline among farmers. Many times, banks consider genuine cases of farmers who are not able to repay their loans and help them.
• Only the farmers who are not engaged in farming are the ones who have not taken KCC loan due to no requirement.

Pali
• The LDM did not have any new points to add.

Uttar Pradesh
Meerut
• The 10% increase that was being provided to the farmers every year when they avail KCC has been stopped and that needs to be started again.

Kaushambi
• Currently under KCC interest subvention is only provided up to the loan amount of Rs. 3 lakhs. however, if the interest subvention limit is increased from Rs. 3 lakhs to Rs. 5 lakhs, that would encourage more farmers to avail KCC.

Q.14. What can be done to improve institutional access to credit for farmers?

Assam
Dhemaji
In order to have better access to institutional credit, here are some of the major sets that need to be taken:
• Awareness about institutional sources of credit needs to be improved.
• Technical support needs to be provided to farmers that are availing institutional credit.

Baksa
In order to have better access to institutional credit, here are some of the major sets that need to be taken:
• Awareness about institutional sources of credit needs to be improved.
• Inter-departmental coordination needs to be better to better help the farmers.

**Andhra Pradesh**

**Krishna**

• Farmers are well aware of the schemes by the central and state governments.
• Often, agricultural officers, farmers information centers like the Rythu Barossa Kendra and bank customer support counters should conduct awareness programmes to make it more popular and improve access to credit.

**Anantapur**

• Banks with the mutual support from the Rythu Bharosa Kendra can display credit information at the access point of the Kendras. All the schemes are set up to improve institutional access to credit for farmers. This would increase the awareness among farmers and in the process improve access to credit.

**Maharashtra**

**Solapur**

• Creating awareness among the farmers about the various schemes available for them which are sponsored by governments is one way through which the credit accessibility of farmers can be improved.

**Nagpur**

• Even though the percentage of farmers resorting to moneylenders for credit has decreased over the years due to the penetration of formal credit through priority-sector lending.
• Awareness among the farmers on various schemes can be improved. Usually, the Bank Managers and Gram Panchayat notify the farmers when organizing these camps.
• The role of Agriculture Department can be increased as they are in close relation with the farmers. If the Agriculture Departments can collaborate with the banks in generating financial literacy among farmers it will be further effective.

**Rajasthan**

**Churu**

• The LDM did not have any new points to add.

**Pali**

• The LDM did not have any new points to add.

**Uttar Pradesh**

**Meerut**

• If the staff numbers are increased then service that is provided to the farmers can also be improved. Increased staff also means that better awareness campaigns can be organised.

**Kaushambi**

• Currently the amount of paperwork that is involved is not high if compared to other loan options. However, if the amount paper work can be reduced that would encourage farmers to avail institutional credit over non-institutional credit.
Insurance

Q.1. What is a better set up for crop insurance, area-based crop insurance or weather-based crop insurance? And why?

**Assam**

**Dhemaji**
- Area based crop insurance as offered under PMFBY is a better form of crop insurance for a state like Assam, the state deals with many forms of natural disasters like floods and earthquakes on a regular bases, and area-based crop insurance provides the best coverage for that.

**Baksa**
- Area based crop insurance as offered under PMFBY is a better form of crop insurance for a state like Assam, the state deals with many forms of natural disasters like floods and earthquakes on a regular bases, and area-based crop insurance provides the best coverage for that.

**Andhra Pradesh**

**Krishna**
- Area-based crop insurance like PMFBY covers natural calamity, death, heavy rainfall. Therefore, it becomes the better option.

**Anantapur**
- Weather based crop insurance is a better setup when compared to area-based insurance because in this district, Bengal gram is the major commercial crop.
- In area-based crop insurance system, the claim amount is calculated by conducting a survey in a few units of land and then applied to the whole area. Any claim that is filed is not properly surveyed but rather given the pre-determined claim amount. In majority of the cases, this claim amount barely covers the losses suffered due to crop loss.
- However, in weather-based crop insurance, weather conditions of the area are taken into consideration and the claim amount is given accordingly.

**Maharashtra**

**Solapur**
- Weather-based crop insurance may have a better set up than area-based crop insurance.
- Under area-based crop insurance system, compensations are being provided to those farmers suffering crop loss/damage arising out of unforeseen events (excess/very low rainfall/natural calamities/Pest & Disease attacks, etc.) having their lands in that Circle/Mandal (Group of villages) which has been affected. Farmers of all villages in that circle get benefits of crop insurance, despite crop failures might not have happened in all the villages. Even, if a single village of a particular circle have experienced crop failure due to adverse climatic conditions, which may get compensation due to un-notified area. All farmers including sharecroppers and tenant farmers growing the notified crops in the notified areas are eligible for coverage. However, farmers should have insurable interest for the insured crops and lands.
- Under weather-based crop insurance system, compensation is being provided to farmers against the likelihood of financial loss on account of anticipated crop loss resulting from adverse weather conditions relating to rainfall, temperature, wind, humidity etc. WBCIS uses weather parameters as “proxy” for crop yields in compensating the cultivators for deemed crop losses. Pay-out structures are developed to the extent of losses deemed to have been suffered using the weather triggers.
Nagpur
- Weather-based is a better option as compared to Area-based crop insurance.

Rajasthan
Churu
- The LDM did not have any new points to add.

Pali
- Area based crop insurance option is a better option.

Uttar Pradesh
Meerut
- Weather-based crop insurance option is better than area-based crop insurance option.

Kaushambi
- Both the options are not very good as both options rely on awarding claims after doing an investigation at the tehsil level. It means that if majority of the tehsil is facing the same issues, then and only then would the insurance company pay out the claim.
- However, that is not always the case, sometimes only individual farmers have issues and not the whole tehsil, in those situations the farmer does not receive his claim.

Q.2. What is your opinion about PMFBY? Do you agree with its approach of insurance to mitigate the crop losses faced by farmers?

Assam
Dhemaji
- PMFBY is a farmer friendly scheme. In the context of Dhemaji, there is a need for village or individual level approach to better promote the scheme.

Baksa
- It is a good scheme. But it is not mandatory. It should be made mandatory, to improve its coverage.

Andhra Pradesh
Krishna
- PMFBY is a good scheme. It is implemented area wise, covering an acre as one unit, and the rules are implemented the same way for the whole unit.

Anantapur
- PMFBY is good scheme, however, the rate of premium should be calculated as par the expenditure incurred during farming and harvesting.

Maharashtra
Solapur
- PMFBY has a comprehensive insurance cover against crop failure due to adverse climatic condition as well as localized perils (Hailstorm, landslide & inundation) and post-harvest losses (Cyclone/Cyclonic rains & unseasonal rains).
- The scheme covers all food & oilseed crops and Annual Commercial/Horticultural Crops for which past yield data is available.
- Under PMFBY, Annual Commercial/Horticultural Crops are being covered through weather-based crop insurance system and all other notified crops through area base approach.

Nagpur
- PMFBY is a good scheme in providing crop insurance. The farmers should be encouraged towards taking crop insurance so that more farmers avail the benefits of crop insurance.

Rajasthan
The scheme is helpful to the farmers. Those farmers whose crop is not getting destroyed are not applying for the scheme.

The intent behind the scheme to provide support to farmers in case of crop destruction.

It is a good scheme. It solves the farmers' issues.

It is not a good scheme. There is no benefit to the farmer, and the premium is also high.

Increasing awareness about crop insurance schemes in Dhemaji is essential to help farmers protect their crops and livelihoods from the risks of natural disasters and other unforeseen events. To achieve this, a mass awareness campaign needs to be conducted, with a focus on involving Self Help Groups (SHGs) and Village Organizations (VOs) in the awareness activities.

It is not very popular. To address this issue, it is important to conduct awareness camps among farmers to educate them about the different schemes and programs that are available to them. These camps can be organized in collaboration with local government agencies, NGOs, and other stakeholders, and should be designed to provide farmers with information about the benefits of the scheme, eligibility requirements, and how to apply.

The level of awareness is not an issue for crop insurance scheme.

Rythu Bharosa Kendra have voluntary staff that have taken the initiative to spread awareness on behalf of the government to spread awareness about the scheme.

All farmers are aware about the crop insurance schemes.

In every village an agriculture officer is available to inform and look after the information needs of the farmer. Every month agriculture advisory board (ABB) meeting is held in every village via Rythu Bharosa Kendra.

Awareness level about crop insurance scheme is found to be adequate. But still many small and marginal farmers are not aware of the same.

Local farmers are being aware about the PMFBY scheme through posters, social media, electronic media, etc.

Awareness campaigns can be organized at each village level.

The awareness level is mediocre among the farmers.

The awareness should be imparted at grassroot level. The representatives from the insurance agencies should be grouped to interact with the farmers so that the doubts,
beliefs and questions that farmers have regarding crop insurance will be better addressed.

**Rajasthan**

**Churu**
Farmers are aware of the scheme.

**Pali**
The awareness level is good and farmers are availing the scheme.

**Uttar Pradesh**

**Meerut**
- There is very little to zero awareness about crop insurance in general, and about PMFBY the awareness is not there at all.

**Kaushambi**
- There is some awareness about crop insurance, but since the benefits are not reaching the farmers, crop insurance is not being availed by the farmers.

Q.4. What are the operational challenges with PMFBY?

**Assam**

**Dhemaji**
Here are some of the major operational challenges in PMFBY
- The requirement of Aadhar Card: not all farmers have an Aadhar Card and so the farmers that do not have an Aadhar Card are not able to avail the scheme, not every farmer has an Aadhar card and also
- There is a lack of skilled and trained personnel to work the insurance set up in the district. There is a need for more skilled and trained insurance agents.

**Baksa**
- The insurance company is not very active, in either promoting or signing up new farmers under PMFBY.

**Andhra Pradesh**

**Krishna**
- One of the major challenges under PMFBY is the fact that the same rules apply to one unit of insured land.
- In doing so farmers with small land sizes are grouped together whereas farmers with bigger lands are have multiple units under his control.

**Anantapur**
- E-crop is an application developed by the state of Andhra Pradesh where relevant information like type of land (owned or tenant), type of crop grown, condition of the crop, etc. is captured and made available to the farmer online. E-crop is used in the state to get a better estimate of the premium and the claim.
- However, due to human error certain mistakes lead to farmer not getting the proper claim.

**Maharashtra**

**Solapur**
- Low claim/settlement ratio
- Delay in getting compensation/timely financial assistance
- Many farmers are getting less compensation than the collected premium from the insurance companies.
• Many farmers are not getting compensation due to non-investigation of losses on account of the localized calamities by the insurance companies.
• Insurance companies have shown no interest in bidding for clusters that are prone to crop loss.
• Currently, the PMFBY scheme doesn’t distinguish between large and small farmers and thus, raises the issue of identification. Small farmers are the most vulnerable class.

**Nagpur**
• The PMFBY portal should be made more user-friendly.
• There are technical issues related to the portal which makes it less farmer-friendly.

**Rajasthan**

**Churu**
The LDM did not have any new points to add.

**Pali**
It is difficult to assess the extent of crop loss of a particular piece land. Sometimes only the crop of a particular land is destroyed and adjacent farms are not affected.

**Uttar Pradesh**

**Meerut**
• There are no changes necessary.

**Kaushambi**
• Crop insurance benefits are not reaching the farmers and that is the biggest problem.
• PMFBY in the current form is not working and it needs to be removed and a new scheme run completely by the government needs to be introduced.

Q.5. What are the structural challenges with PMFBY?

**Assam**

**Dhemaji**
• There is also a lack of theme-based awareness and training among farmers about the benefits of agricultural insurance. Many farmers may not be aware of the different types of insurance products available to them, or may not understand how to properly use and manage insurance coverage to protect their crops and livelihoods.

**Baksa**
• The LDM did not have any new points to add.

**Andhra Pradesh**

**Krishna**
• From the beginning, the PMFBY has a good and workable structure.

**Anantapur**
• With the information on farmers, the PMBFU has to be done from farmers to write Bharosa Kendra to portal in the structure. But this is not done properly.

**Maharashtra**

**Solapur**
• Low level of penetration of crop insurance in terms of enrolled farmers and insured areas.
• Private crop insurance companies are making higher profits by charging higher premium rates with low claim amount.
• Reporting of low crop yield than actual yield to become those farmers eligible for compensations.

**Nagpur**
• The farmer is given a 48-hour window to notify the farmer about the crop damage suffered. This is not enough time for the farmer to notify the concerned authorities. Many times farmers cannot go and notify about the crop damage within this time-period and hence, miss out on the insurance claim.

**Rajasthan**

**Churu**
- The LDM did not have any new points to add.

**Pali**
- Private insurance companies are not paying the rightful compensation to the farmers. Banks have very limited involvement in the scheme processes.

**Uttar Pradesh**

**Meerut**
- There are no changes necessary.

**Kaushambi**
- PMFBY is somewhat compulsory. A premium is deducted from all the KCC accounts, even if they have availed the scheme or not and that should not be the case. It should be up to the farmers if he wants to avail it or not.

**Q.6. Are farmers receiving their claim in case of crop losses? What are some of the obstacles faced by farmers to receive the benefits?**

**Assam**

**Dhemaji**
Some of the farmers have received the claim amount. Some obstacles they faced are:
- a. Availability of insurance agent or company policies
- b. Lack of awareness in crop insurance claim
- c. Communication gap during natural calamity, like floods.

**Baksa**
- The LDM did not have any new points to add.

**Andhra Pradesh**

**Krishna**
- Farmers do receive their claim however one the biggest obstacle faced by the farmers is the quote they receive on their land. For example, one of the farmers received a quote of 20 paisa for every acre of land that he had.

**Anantapur**
- The farmers are receiving the claim amount.
- A team from the state and central government both visit the field against which the claim has been filed. According to the damage the claim is given.
- Even though a team from both the centre and the state visit the field, majority of the premium amount and the claim amount is handled by the state government.

**Maharashtra**

**Solapur**
- Yes, farmers are receiving their claim in case of crop losses.
- Obstacles faced by farmers to receive the benefits:
  - non-investigation of crop losses in case of localized calamities
  - Disparity in reporting of crop losses by Agriculture Department and Insurance Companies
  - Inaccurate assessment of crop losses.
  - Disparity in compensation received by farmers who have affected by the same incidents
- Delay in the receipt of compensation

**Nagpur**
- There have been cases where claims are not paid out. This should not be the case. The claims should reach the farmers without any delay.

**Rajasthan**

**Churu**
- The LDM did not have any new points to add.

**Pali**
- Farmers very rarely receive the claims under the scheme.
- Even the claim amount that is received does not cover the crop that was lost.

**Uttar Pradesh**

**Meerut**
- Yes, farmers are receiving their claims on time.

**Kaushambi**
- The process of receiving the claims is complicated and the investigation of a situation is done at the tehsil level not at the individual level, due to which the farmers are not receiving their claims.

Q.7. Do you think the public private partnership (PPP) model is suitable for crop insurance? If not, what alternative model will function better for extending the benefit of crop insurance to farmers?

**Assam**

**Dhemaji**
- The Public Private Partnership (PPP) model is not suitable for crop insurance. The alternative model like PMFBY will function better for extending the benefit of crop insurance to farmers.

**Baksa**
- The LDM did not have any new points to add.

**Andhra Pradesh**

**Krishna**
- Public Private Partnership is suitable for crop insurance in India.
- India is taking the help of IFF CO - FICO Tokyo as PPP.

**Anantapur**
- The PPP model is very suitable for crop insurance scheme, as it would benefit the private sector while meeting the needs of the government.

**Maharashtra**

**Solapur**
- Yes, Public Private Partnership (PPP) model can be suitable for crop insurance as it can improve crop insurance coverage and insured areas, speedy assessment of crop losses and faster settlement of compensation, etc.
- Further, it can also make the process more transparent without any interference from local political leaders or farmers, which may lead to provide financial assistance to the genuine farmers.

**Nagpur**
- The private players in crop insurance might be the reason for the reluctance towards availing crop insurance by the farmers. The farmers hesitate to get crop insurance
because of the private agencies as they fear they might be exploited by the private players.

- Private companies have their own restrictions to not give insurance claims. This demotivates the farmers from getting crop insurance.

**Rajasthan**

**Churu**

- The LDM did not have any new points to add.

**Pali**

- The current model should ideally work properly but the government should ensure that the farmers are receiving their rightful claims.

**Uttar Pradesh**

**Meerut**

- Yes, it is a good and beneficial model.

**Kaushambi**

- PPP model does not work as private companies only worry about their profits. If the insurance scheme is to work then a crop insurance scheme run completely by the government needs to be introduced.

**Q.8. What would you suggest to improve crop insurance in India?**

**Assam**

**Dhemaji**

The suggestion for improve crop insurance in India

a. Cropping insurance should be regular basis.

b. Awareness campaign during transplanting season of crop.

c. Simple and accessibility of insurance claim.

**Baksa**

- Farmers should be clubbed in different groups, and leader can be made to pass on information and discussion

**Andhra Pradesh**

**Krishna**

- The loss calculation process needs to be improved. In the current system, due to a shortage of staff the calculation process is not carried out properly and the estimate is not taken correctly, causing the farmers not getting the correct amount of claim.

**Anantapur**

- Geo-tagging the field with the type of crop grown and the farmer would be very beneficial. A particular field can then be registered to a particular Rythu Bharosa Kendra.

- This would avoid any confusion regarding the land boundary and would create an official record of the same. In the future, crop insurance should be generated for the farmer automatically, with minimal effort from either the farmer or the insurance company.

- When it comes to receiving claim, the farmer can directly get the claim amount from the state without any involvement from the bank.

**Maharashtra**

**Solapur**

- Crop insurance frameworks can be designed for the farmers at state level-based on weather conditions and cropping patterns, and the Union government provides financial and intellectual support to respective states.

- Improving accuracy in assessment of crop losses
• Use of innovative technologies like the use of Drones, Remote sensing, etc. for measurement of crop damages
• Digitization of land records & cropping pattern
• Competitiveness among the crop insurance companies
• Financial assistance can be provided to those crop insurance companies working in such clusters which are prone to crop loss to reduce their financial burden.
• Government should release their share in premium on time to the respective crop insurance companies in order to make payment of compensation to the farmers in timely manner.
• Crop yield data should be accurate and on actual basis. Yield data should not be downsized to get the compensation under crop insurance cover.

Nagpur
• Public agencies should be encouraged for crop insurance.
• A 48-hour notification window for crop destruction should be removed.
• The farmers should be getting the rightful damage claim they make with no delay.
• Procedural simplification
• The portal should be made more user-friendly.
• Filling for the crop insurance should be done through the CSC centres.
• Process of getting claims should be simplified.

Rajasthan
Churu
• The LDM did not have any new points to add.

Pali
• The LDM did not have any new points to add.

Uttar Pradesh
Meerut
• The premium amount should be reduced to attract more farmers to avail crop insurance. Crop insurance should be made compulsory for all farmers.

Kaushambi
• A government company for crop insurance needs to be introduced like LIC. However, this new company should only for the insurance needs of the farmers.

Q.9. Will the crop insurance schemes benefit from the digitisation of the crop insurance process?
Assam
Dhemaji
• The crop insurance schemes are very helpful for instant insurance process. But farmers have to be aware of the time to apply for the scheme and the claim process.

Baksa
• In Baksa, majority of the farmers are not aware about the concept of digitisation.

Andhra Pradesh
Krishna
• Digitisation would be very beneficial to the farmer. However, even at the current level of digitisation, certain improvements are needed as numerous times the website does not work properly, and the beneficiaries are not able to access the insurance website.

Anantapur
• The crop insurance would benefit greatly from the digitisation process. This would increase transparency, and any wrong doing that might be happening in any part of the process would not happen.

**Maharashtra**

**Solapur**

• Yes, crop insurance scheme will benefit from the digitization of whole process flow of the scheme.

**Nagpur**

• Yes, digitization of the crop insurance process will be helpful.

**Rajasthan**

**Churu**

• The LDM did not have any new points to add.

**Pali**

• The LDM did not have any new points to add.

**Uttar Pradesh**

**Meerut**

• Yes, digitization would benefit a lot. It will reduce or eliminate the middlemen and features like auto credit. This would mean that the farmer does not need to remember when to pay the premium.

**Kaushambi**

• Yes, digitization would be extremely beneficial.