FACE
CII-Jubilant Bhartia
Food and Agriculture Centre of Excellence

Confederation of Indian Industry

AGRICULTURE MARKETS IN INDIA

ROLE OF POLICIES & INSTITUTIONS

CII-FACE STUDY
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CII-Jubilant Bhartia
Food and Agriculture Centre
of Excellence (FACE) Study

Foreword

For over five decades - since the time of green revolution - several institutions and policy instruments have formed the backbone of a market architecture that linked farmers and consumers effectively. Among these, Agricultural Produce Marketing Act, Market Yards (Mandis), Essential Commodities Act, Forward Contracts Regulation Act, Minimum Support Price, Food Corporation of India have played a prominent role.

In the more recent years, rising disposable incomes and growing urbanisation has brought about a dimensional change in the pattern of consumer demand. The share of cereals is reducing in the diet, in favour of vegetables, fruits, milk, and meat. Besides more variety, today's consumer demands superior quality, enhanced safety, and added convenience while shopping or using products. This dictates a fundamental transformation.

Producing what the consumer demands is an entirely different ball game from consuming whatever is produced by the farmer. It is a re-orientation from production-driven supply chains to demand-driven value chains, and will entail huge investments in creating appropriate infrastructure in post-harvest, logistics, processing, packaging, retailing, and information systems. Corporate involvement through vibrant agri-businesses and food-processing can considerably enhance value for farmers by linking them to the value-seeking consumer markets.

Ironically, the very institutions and policy instruments that have delivered results over five decades have become stumbling blocks in achieving this transformation. Recognizing this paradigm shift, the Government of India has initiated a number of reform measures in the form of a new Model Agricultural Produce & Livestock Marketing Act, Model Contract Farming Act, Introduction of Options in Commodity Derivatives Market, e-NAM etc.

Much of the action has to happen at the State level or market participant level to translate this intent to reality. And such action seeks evidence before acting. In this backdrop, CII-Jubilant Bhartia Food and Agriculture Centre of Excellence (FACE) presents the study 'Agriculture Markets in India – Role of Policies and Institutions'. The study is an attempt to bring the required evidence to the table, supported by on-ground research. The release of this study is timely, when the nation has committed itself to the mission of doubling farmers incomes by 2022.

I hope all the stakeholders will make use of the study.

S. Sivakumar
Chairman
CII Expert group on Doubling Farmers' Incomes and Group Head - Agri & IT Businesses, ITC Ltd

Acknowledgments

This study on agricultural marketing was undertaken under the championship of the CII National Council on Agriculture. The Council has been particularly active on policy advocacy related to liberalization of agricultural markets in India and emphasizing the need to give farmers the freedom to sell anywhere or to whosoever they want, not restricting them to the government regulated APMC markets. Considering the periods of extreme price volatility in perishables, it was recommended by the CII National Council on Agriculture to delist fruits and vegetables from the APMC list. The Council further emphasizes that the Model Act 2003 (amended APMC Act) should be implemented in its true spirit across states.

While it is heartening to note that several states have made progress on various fronts in liberalizing agricultural markets, there is still scope for marketing and related institutional reforms to ensure that farmers earn higher returns and consumers pay fair price. With the launch of the National Agricultural Market (NAM) in 2016 and the proposed Agricultural Produce and Livestock Marketing (Promotion and Facilitation) (APLM) Act, the government aims at creating a single unified market and bringing crops and livestock under marketing regulations in line with the focus on integrated farming systems.

To understand the extent of implementation of the Model Act 2003 at the state level that encourages direct marketing, simplifies marketing rules, rationalizes taxes and fee and the final benefits accruing to the farmers in marketing their produce, an in-depth analysis of the marketing reforms was undertaken based on information collected from respective state departments. Selected mandis in Delhi and Punjab were surveyed to understand the marketing operations, role of various market functionaries, and current practices. Specific value chain analysis on tomato was done to map the price formation along different marketing channels for tomato cultivated in selected districts of Gujarat and marketed all the way to Azadpur mandi in Delhi and retailed further on Delhi and NCR. The traditional marketing channel for onions was studied in selected mandis of Pune and Nashik, Maharashtra, to understand the price realization by farmers, their experience of selling at regulated market yards and assess their level of dependence on the commission agents. The study also involved a literature review of various alternative marketing models including private markets, farmers' markets, organized retail and wholesale, and processing players linking with the farmers directly to understand the extent to which these models have evolved and its impact on farmers and other stakeholders. Lastly, in the context of NAM, a sample study was undertaken in the states of Telangana and Himachal Pradesh for grains and fruits and vegetables respectively, to capture the implementation of NAM and experience of the stakeholders including farmers, commission agents, traders and the APMC in this context.

The CII- Jubilant Bhartia Food and Agriculture Centre of Excellence (FACE) undertook the study in terms of conceptualization, design and execution. During the course of the study, FACE collaborated with partners like Gokhale Institute of Political Science and Economics, Pune, and Knex Consulting. FACE also conducted the mandi survey with the help of Impetus – a Delhi based survey agency. FACE is grateful to all the collaborators who helped execute the study. We are also grateful to the various state agriculture marketing boards and APMC officials who gave us time and shared information to help us strengthen the analysis.

We acknowledge the support extended to us by the members of the CII National Council on Agriculture who funded the study and also extended their guidance

and gave us their valuable time and expertize in putting issues in the right perspective and making the study relevant to the current policy thinking on agricultural marketing reforms. We are particularly thankful to Mr S Sivakumar, Chairman, CII National Council on Agriculture and Chief Executive – ABD, ITC Limited for his guidance and support.

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EXECUTIVE SUMMARY

I. Introduction

Agricultural marketing holds the key to higher growth, improved returns to the farmers and creating the right incentives for the players foraying into the agribusiness space. Efforts to drive and improve the marketing scenario are crucial for pushing up the income portfolio of farmers.

The Agriculture Produce Marketing (Regulation) Act came through in 1960s and 1970s, aimed at safeguarding the interests of the farmers to be able to market their produce at remunerative prices through government regulated markets without being mishandled and manipulated by buyers with malicious intentions.

However, over time, the agricultural marketing system has drawn considerable scrutiny on grounds of failing to deliver remunerative price to farmers, inadequate and poor infrastructural facilities resulting in huge post-harvest loss and wastage, complicating the process of doing agribusiness for private players, and fragmentation of supply chains with growing intermediation. These conditions together with supply issues have further resulted in skyrocketing inflation in food items which hurt the consumers, inadequate private investments in markets and infrastructure and increasing renting seeking practices.

It is interesting to note that by and large Indian agriculture is commercialized and markets have been playing an increasingly important role. Except for a significant part of grain that is procured by the public sector, about 75 per cent of the value of agricultural output is routed through markets. This makes it imperative to ensure that marketing practices are efficient, driven by competition irrespective of their being controlled by the government or the private sector.

The step towards creation of a National Agricultural Market (NAM) leveraging technology for price discovery, assaying, bidding, payments, etc has the potential to deliver maximum benefits to farmers in terms of remunerative prices by connecting markets across India seamlessly. While the rolling out of e-NAM is promising, taking it to scale through uniform implementation will be most important in delivering the desired benefits.

Appropriate marketing reforms will create an enabling environment for both the farmers and private players, creating opportunities for greater investments, and bridging the gap between producer and consumer prices thereby addressing the inflationary concerns. While marketing reforms which help create a win-win situation for the farmers as well as traders is most essential, it will be worthwhile to consider broader reforms that cater to farmers' access to credit, warehouse facilities, incentives for private markets and infrastructure, integrated linkages with farmers/farmer groups, use of technology to ensure transparency and accountability of practices.

Some of the key drivers of agricultural marketing reforms were identified as follows:

- Widening gap between farmer and consumer price
- Overload of agriculture marketing charges and fee
- Speculation and hoarding practices
- Overcrowding of commission agents and market intermediaries
- Complex market licensing system
- Inadequate infrastructure and poor maintenance resulting in wastage and limited scope for value addition

II. Implementation of agricultural marketing reforms – status and way forward

During 2013-14, when food inflation soared, it was suggested that fruits and vegetables that are highly perishable and create inflationary pressures be removed from the APMC list of commodities that are to be traded mandatorily through the government regulated market yards. This implied, fruits and vegetables could be marketed directly between the farmer and buyer beyond the mandi and such a transaction would not attract market fees.

- Taking the cue, some of the states went ahead and delisted fruits and vegetables from the APMC Act, while others are in the process of announcing the same and bringing about the notification. Presently, Assam, Chhattisgarh, Delhi, Gujarat, Haryana, Himachal Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Meghalaya, Nagaland, Odisha, Rajasthan and West Bengal do not have fruits and vegetables under the ambit of APMC Act. Karnataka has replaced the market fee with a user charge of 1 per cent and Rajasthan is yet to decide upon the user charge which is in line with the proposition that fee should be charged for availing facilities and services within the market yard/sub-yard/area. Himachal Pradesh has exempted fruits and vegetables from market fee and replaced it with a user charge except for apples, which is an important commodity in the state both, in terms of local production and market arrival. Although Maharashtra had announced delisting of fruits and vegetables from the APMC list several years ago, the notification could not be brought out due to fierce resistance from the commission agents who found this move to threaten their livelihoods. However, finally in 2016, Maharashtra delisted fruits and vegetables from the APMC list.
- The current practice of dual levy of market fee for movement of commodities across states is of concern and has a dampening impact on business sentiments. Particularly, for transactions that do not involve utilization of market facilities and services in the destination states, levying of market fee do not make sense. For instance, a commodity sourced in Punjab at 4 per cent market fee (including charges for rural development fund) if brought into Uttar Pradesh will again attract market fees of 2.5 per cent
- Inputs from State Marketing Boards reveal that Commission fee are highest in Maharashtra at 10 per cent on fruits and 8 per cent on vegetables followed by Gujarat at 7 per cent and Delhi at 6 per cent. It is interesting to note that some states (Arunachal Pradesh, Assam, Goa, Jharkhand, Madhya Pradesh, Meghalaya, Orissa and West Bengal) do not have commission agents. In Delhi, Punjab, Himachal Pradesh, Gujarat, and Uttarakhand, commission fee is charged from the buyer and not the seller unlike other states. Delhi brought about this reform and notified it in 2014 by virtue of which the commission agents are officially not allowed to charge any commission fee from the farmers. Instead they recover the same from the buyers. Gujarat, for long has not been charging commission fees on farmers coming to the mandi. In Maharashtra, government made a move to bring about this change but faced great resentment from the commission agents. Although the commission fee was brought down by 2 per cent, the payee was not changed from farmers to buyers. However, the change is still under consideration.
- The Model Act 2003 calls for replacement of the system of licensing for market functionaries by a time bound process of registration to be valid for one/more markets. States differ in their practice of issuing licenses for trading in markets. Inputs from the State Marketing Boards reveal

that the need to obtain a license for every market is not practiced in Delhi and Gujarat. In Maharashtra on the other hand, licenses are issued for a single market area. However, there is no provision for a single nationwide license for obvious revenue reasons and also due to the absence of an integrated information system. This is likely to be addressed with the introduction of e-marketing platforms.

- Delhi has removed the "own shop" criteria for obtaining a license. In Maharashtra and Gujarat, while it is necessary for the commission agent to own a shop, it is not the same for the wholesale traders. To allow competition and restrict rent seeking and corrupt practices, it is important to do away with licensing and issue a permit or registration by virtue of which one can trade in the mandi. There should be other mechanisms to ascertain the credibility of the trader (either through bank guarantees or other similar measures) and not necessarily tie it to the criterion of owning a shop.
- Market fee are levied for the use of market infrastructure and services and paid to the APMC which in turn is used by the Committee for market development and other costs associated with its functioning. The popular argument has therefore been that transactions which take place through contract farming, direct marketing and/or private markets should not be eligible for market fees. This provision is applicable for delisted fruits and vegetables as well. Currently, transactions outside the mandi for processing or export are exempted from market fee. In some cases, it is a direct exemption while for others it is a reimbursement.
- One of the key provisions of the Model Act 2003 is to promote direct marketing through contract farming, famers' market and/or private markets. While several states have allowed for direct marketing, the pace of progress has been somewhat slow. Delhi announced the creation of Kisan Bazaar (farmers' market) where farmers can directly sell to the buyers (2014). Maharashtra has already issued several licenses for private markets and allows for direct marketing. Gujarat and Punjab have also seen private players coming in and procuring directly from farmers either through contract farming or otherwise, subject to the market fees being paid to the relevant mandi. These emerging alternative marketing models are still to come up to the scale to be able to compete with the mandis.
- The Central Government has proposed the Agricultural Produce and Livestock Marketing (Promotion and Facilitation) Act 2017 which aims at bringing both crops and livestock under marketing regulations given the focus on integrated farming systems as an effective means of securing income and livelihoods of marginal and small farmers. In line with the earlier Model Act 2003, APLM Act 2017 also strives towards greater market liberalization and connecting farmers directly with buyers. The Act also emphasizes the need to remove market intermediation and leverage technology towards creation of a unified market.

III. Traditional mandi system continues to thrive[1]

- Typically, large markets are dominated by commission agents and traders who have been in business for several decades as observed in Azadpur as against fairly new entrants in the mandis surveyed in Punjab.
- Cash remains the most common mode of payment, although other modes such as bank transfer and cheque payments are gaining popularity. In Azadpur, there are a significant number of commission agents and traders who make and receive payments in cheque and bank transfers. Given the increasing penetration of technology and access to formal banking, a large number of market functionaries are moving towards handling less cash. In Punjab on the other hand, more than 90 per cent of payments are made in cash, while a fairly small proportion are made and received via cheque or bank transfers.
- Time taken to settle payments is fairly quick, particularly those made by the commission agents to the traders and farmers who come to sell their produce in the mandi. Farmers are usually paid on the same day except in cases where farmers have taken advances from the commission agents.
- In both Azadpur and Punjab mandis, the main factor determining payments is the type of commodity. Other factors such as loan amount payable, mutual relationship (built over the years), and availability of cash also influence payment decisions in Azadpur. On the other hand, in Punjab, the value/quantity of transaction plays a much larger role than mutual relationship given that neither commission agents nor traders/ farmers have a stronghold in the markets surveyed.
- There was a unanimous opinion among farmers/traders that commission agents form an integral part of the mandi system and are a lifeline for them because they provide cash advance, guarantee purchase and make payments on time. In Punjab, while most farmers considered commission agents integral to the system, around 15 per cent felt they were not required. Also, while most respondents declined to give their opinion on commission fee, around 13 per cent each responded that buyers are reluctant to pay fee and that they are often unaware of fee being charged to them.

IV. Role of market intermediation – selected value chain studies

- A tomato value chain analysis shows that market intermediation exists at various levels of the value chain, starting from the village to the mandi level, which results in increase in margins and lower price realization by the farmers. In this particular study, farmers received about 44 per cent of the gross price at the retail end and about 57 per cent of the net margin distribution. Middlemen play important roles including provision of credit, guaranteed off take of produce, movement of produce, sorting and grading, etc. The retail price was observed to be an important determinant of the margin retained by the farmer. At Rs 21.9, farmer could retain a margin of 80 per cent and it gradually decreased to 76 per cent at Rs 17.7 and 65 per cent at Rs 13.54 and 1 per cent at Rs 10.7. Under these different price scenarios, the margins of the middlemen increased as price declined.

[1]Based on results of mandi surveys in Delhi and Punjab

- The highest costs as observed, are due to transportation which is found to be higher than the cost of production. If the produce is directly shipped to the consumption center without passing through the mandi channels, the costs would be reduced. It is felt that such a mechanism of reducing the distance travelled by the produce needs to be created to minimize freight charges as well as wastages in the value chain.
- Unlike other markets, none of the farmers selling onion in Gultekadi and Lasalgaon *mandis* in Pune and Nashik, Maharashtra, reported to have taken any loans from commission agents. They avail loans from Primary Agricultural Credit Societies (PACS), Self Help Groups (SHGs) and banks, often at exorbitant interest rates ranging upto 24 per cent.
- Many farmers (interviewed) reported to not be satisfied by the prices offered to them by the commission agents. Several farmers felt that there is merit in doing away with commission agents, while others felt they should continue because of guaranteed purchase of the produce they bring to the market yards.

V. Mandi infrastructure – status and impact on market efficiency

- For the mandis surveyed in Punjab, Gujarat, Maharashtra and Delhi, most of the markets had infrastructure facilities and services essential for handling produce in the market yards and facilitating business. Gujarat has been particularly advanced with markets having innovative facilities for waste management, conservation of water, infrastructure for conducting training activities. The APMC provided for soil testing facilities in certain cases.
- It was observed that for bigger markets, bulk of commodities flowing into the yards led to congestion created by trucks moving in and out, making it difficult to manage operations systematically. There is scope for offloading the traffic to smaller sub yards in certain cases.

VI. Alternative marketing channels – promoting direct farm-firm linkages

- While bulk of agricultural marketing is conducted through regulated markets, there are alternative marketing channels that have emerged over time such as farmers' markets, private markets, contract farming, and direct marketing with farmers, among others. These models have the advantage of linking farmers and buyers directly without going through the regulated markets/ mandis which benefit both in terms of savings on time and intermediation fee and in some cases, transportation costs (borne by the farmers). Models such as farmers' markets were promoted in the wake of high prices of perishables such as fruits and vegetables to help consumers purchase at reasonable rates and farmers benefit from higher net returns by selling directly to the consumers without going through the mandis paying commission fees, etc.
- The experience of the alternative marketing channels has been a mixed bag in terms of scaling up and sustainability, and hence their impact on the farmers. However, there is scope for strengthening these models and replicating them across value chains and geographies, particularly in the case of perishables which are high value in nature yet most susceptible to risks.

VII. National Agricultural Market (NAM) – rollout and impact

- The objective of introducing e-NAM is to ensure that all market transactions including entry, exit, bidding, weighing and assaying are digitally recorded and all payments are made electronically (ideally through the e-NAM payment gateway) to allow complete transparency. In addition to this, uniform levy of market fee and other charges will enable creation of a unified market wherein demand at an all India level will determine prices and farmers can actually benefit from higher prices with greater access to markets.
- With 16 states and 585 markets already enrolled on e-NAM and operational, and 73.5 lakh farmers registered on e-NAM portal with a turnover of Rs 36,275 crore from the trading of 1.52 crore tonne produce, it is important to understand the significance of these numbers and following the current trend, how NAM is likely to shape up. Appreciating the fact that it is a mammoth task to streamline and unify agricultural markets, some of the key aspects of the current functioning of sample e-NAM markets indicate that there remains much to be achieved beyond these numbers. Hence the focus and attention should be on the issues that need to be addressed at the state, district and market levels.
- It will be important to strengthen market infrastructure and assets; target increasing volumes of transaction through the e-platform; streamline e-bidding and payments reducing human interface and leveraging technology; setting up assaying facility and making it fully functional; ensuring individual farmers are paid directly irrespective for their physical presence in the markets and doing away with market intermediation.
- Eventually, with more markets enrolling under e-NAM, it will be imperative to facilitate inter-state trade for realisation of greater benefits for the farmers as well as the consumers. Hence issuing single license to traders will be critical to realise the goal of a unified market. As envisaged in the proposed APLM Act, definition of markets need to include cold stores, warehouses, packaging, and processing centres that provide greater option to farmers to sell their produce at nearby locations and not travel extensively as is currently observed. Equipping markets with storage, grading, sorting, packaging and processing facilities can help handle perishables much more efficiently, reducing post-harvest wastage. In certain cases, such as with apples and tomatoes in Himachal Pradesh, packaging in boxes and crates are a common practice which has evolved over time. Similar practices need to be promoted and incentivized for improved handling of perishables.

VIII. Way forward

It is well recognized that for agricultural marketing to be successful in delivering benefits to the farmers and consumers, reforms need to go beyond those policies and institutions that are directly related to marketing. The existence of extensive market intermediation is clearly a result of missing or not functional institutions which have gained a strong foothold in marketing operations. Without providing an alternative that is better and efficient than the current practices, and offers to lend greater security against any kind of risks associated with farming, harvesting, storage and marketing, it will be difficult to convince the farmers to adopt new methods and practices. Some of the key issues directly or indirectly related to marketing that need to be addressed through policy and institutional reforms are summarized as follows:

Strengthen formal credit and insurance mechanisms

About 64 per cent of the outstanding debt of cultivator households are from institutional sources while the remaining 36 per cent are from non-institutional sources (estimates for 2013 according to All India Debt and Investment Survey, NSSO). Access to formal credit and insurance schemes to mitigate risks against price and income failures need to be strengthened. While there is provision under Priority Sector Lending to create a robust credit arrangement mechanism in agriculture, it is important to undertake and ensure last mile delivery to the farmers. Benefits of flagships schemes like the Pradhan Mantri Fasal Bima Yojana (PMFBY) should reach all the farmers including the marginal and small through universal registration. Making formal credit more accessible and affordable to the farmers through Kisan Credit Cards (KCC) and/or farmer self-help groups will be critical to prevent them from taking credit from informal sources at exorbitant rates.

Strengthen institutional mechanisms for success of contract farming

Experience of contract farming in India has been a mixed bag and has been observed to be successful under specific circumstances. Value chains that cater to export of fruits and vegetables have thrived under contract farming as these require specific quality and variety of fresh produce which require working directly with the farmers. Poultry and dairy are examples of successful farm-firm linkages wherein farmers have benefited from assured buyback and price guarantee while buyers have benefited from assured supply of quality produce. The economies of scale do not always work out for the front-end buyer to tie up with the farmers directly, particularly in the case of vegetables and those which are easily sourced from *mandis*. To secure farmers against income and price risks, it is important to strengthen institutional arrangements that encourage backward linkages in terms of access to quality inputs, agri services, and guarantee buyback and price offered. Increasingly, demand for high value, quality and safe food, will require front end players to directly source from farms that are certified and follow practices that conform to global standards Contract farming as an institution can be instrumental in ensuring successful farm-firm linkages.

The Central Government launched the Contract Farming and Services Act in May 2018, showing intent towards focusing on contract farming; however, certain clauses in the Act, such as guaranteed buy-back, mandatory insurance, lack of provision for recovery of loans and advances in case of default by the producer, are likely deter contracting parties/companies to enter such arrangements under the Act.

Abolish controls through Essential Commodities Act (ECA) to avoid black marketing and sudden spiralling of prices

The regulatory framework of the ECA needs to be abolished to create a single unified market. Restriction on storage, movement and distribution need to be done away with in line with the objective of market liberalization. Farmers' income needs to be secured through a set of income policies including income assurance schemes, particularly when there is a glut through support price, warehouse receipt system, etc. Further, policies need to clearly distinguish between black marketers/ hoarders and genuine service providers to encourage investment in supply chain and inventory management without jeopardizing the interests of the farmers.

Integrating Spot & Derivative Markets for early Price Discovery and Risk Management

Efforts must be made to integrate the spot and derivative markets in a manner that both serve their respective purposes while reinforcing each other. It is important for the market participants to learn how futures and options can be embedded in the bilateral spot market transactions so that the price risk can be off-loaded to the larger marketplace; otherwise, it remains a zero-sum game between a buyer and a seller. This is also the best way to make contract farming work, because both the farmer and the sponsor hedge, making use of the futures or options, and neither of them gain by reneging on the contracts when the prices go up or down.

Rationalize market related fees and taxes

There are a plethora of fee and taxes involved in agricultural marketing which are either indirectly borne by the farmers in terms of lower net price realization or the consumers in terms of higher prices. With the introduction of Goods and Service Tax (GST) in general and NAM in particular, a lot of these fees and taxes will be rationalized to the benefit of the agricultural sector. It is observed from the tomato value chain analysis that transportation accounts for a major share of the cost of production which to a large extent could be rationalized through implementation of uniform taxes under GST.

However, fee and taxes specific to agricultural market that continue to exist, need further rationalization to ensure prices are competitive at both ends, particularly in terms of the following:

- removal of dual market fee charged by most states in case of the same commodity bought and sold in different states.
- implementation uniform market fee across states
- reducing commission fee from current levels of (5 – 11) per cent (official). It has been proposed by the APLM Act to restrict commission fee to 2 per cent in the case of non-perishables and 4 per cent in the case of perishables. With the introduction of NAM, intermediation and any fee associated with it, should be gradually phased out.
- checking double charging of commission fee from farmers and buyers (observed in several cases during the mandi survey) which is extremely difficult to identify given the transactions that take place between commission agents and farmers outside the control of the APMC.
- improving awareness among farmers/ small traders on the nature of fee & taxes paid and make available a robust redressal system to address these issues promptly.

Strengthen e-marketing platform

Moving towards a single unified agricultural market is a right step in the direction of market liberalization. Leveraging technology to connect all agricultural markets and deliver fair and remunerative prices to the farmers as well as ensure seamless availability of commodities is a huge task in hand. So far, the design and implementation of NAM attempts to address the existing inefficiencies in market operation and streamlining the same to ensure that farmers benefit from fair price for their produce and there is greater transparency in transactions.

Given that it is still at its early stage of implementation, markets which have already enrolled are in the process of setting up infrastructure, making services available and most importantly, bringing farmers, traders and commission agents on board to gradually make a complete

shift towards e-NAM. Transactions under e-NAM are taking place and the number of stakeholders getting registered, volumes and value of commodities being traded are increasing, which is good progress. However, counting numbers is not enough and there is greater need to monitor progress at each market level and understand the local challenges and measures that need to be taken to address the same. Issues related to how farmers are getting benefitted, how market operations are getting streamlined, how transparency is benefiting stakeholders with fair price discovery, standardized assaying, e-payment, etc need to be looked at very closely.

Considering the importance of fair price discovery under e-NAM, it is absolutely important to monitor how the process is being followed in the markets and take measures immediately to ensure that corrections are made and the process is on track. Going forward, NAM will have to attract more and more farmers on the bidding platform and it will not require them coming to the physical markets themselves. Right now, they are still dependent on the traders and commission agents. Although most of them are aware of prevailing prices and have the right to refuse sale if they are not satisfied with the prices, farmers need to participate more actively and reduce their dependence on market intermediaries. Also, payments should be made to each and every individual farmer whose commodities are sold in the market and not to a representative unless it is a FPO or authorized farmer group. The essence of NAM lies in leveraging technology in delivering benefits to the farmers and hence human interface needs to be reduced. The last mile connectivity through the virtual platform will ensure that NAM delivers on its objectives.

The idea of reforms is not to do away with mandis or the functionaries but to encourage competition (and render collusion, cartelization ineffective) and allow market forces (to a large extent) to determine the future of agriculture marketing, going forward.

INTRODUCTION

Agriculture unlike other sectors in India is still awaiting holistic reforms. The piecemeal reform approach has been primarily driven by food security concerns and the need to secure food resources in an increasingly volatile and unpredictable global environment. The trend of increasing growth reflecting resilience to climatic and other environmental shocks has been somewhat dampened by the agricultural performance over the last few years. Between 2012 and 2016, agriculture grew at an average of 1.6 per cent per annum, as against the 12th Plan target of 4 per cent per annum. Further, as per the January 2018 forecast of the Central Statistics Office (CSO), the Gross Value Added (GVA) from agriculture will fall sharply from 4.9 per cent in 2016-17 to 2.1 per cent in 2017-18. Recurrent drought conditions have adversely impacted overall food grain production as well as high value commodities. Food inflation has been modest except for prices of vegetables and high value commodities spiralling due to erratic supply. With low global food prices, inflationary pressures in the domestic market have been under control. In 2015-16, the Government launched flagship programs - Krishionnati Yojana (Green Revolution), Pradhan Mantri Krishi Sinchai Yojana (PMKSY), and Pradhan Mantri Fasal Bima Yojana (PMFBY), aimed at improving productivity through sustainable agricultural practices, better access to inputs and services and strengthening risk mitigation tools for the benefit of the farmers. Government approved a central sector scheme for promotion of National Agriculture Market (NAM) through Agri-Tech Infrastructure Fund (ATIF) on 1st July, 2016.

Of the many factors, agricultural marketing is a major driver and efforts to improve the marketing scenario holds the key to higher growth, improved returns to the farmers and creation of the right incentives for the players foraying into the agribusiness space. The Agriculture Produce Marketing (Regulation) Act came through in 1960s and 1970s, aimed at safeguarding the interests of the farmers to be able to market their produce at remunerative prices through government regulated markets without being mishandled and manipulated by buyers with malicious intentions. Post the Green Revolution period with the granaries overflowing, it was critical to establish marketing networks to ensure farmers are able to sell their produce and earn remunerative returns. In the absence of strong channels of communication and a well-developed transport system coupled with a non-existent legal framework to protect the interests of the farmer, the APMC Act was seen as the need of the hour. Under this Act, the Agricultural Produce Marketing Committees (APMCs) were formed with the supercilious goal of protecting farmers from the vagaries of the market. It was expected that through the formation of regulated markets, fair and remunerative prices would be paid by the traders to the farmers and the same would be monitored and enforced through the regulations. Most importantly, with a designated market yard, the farmer would know where to go to sell his produce and at what price.

However, over time, agricultural marketing system has drawn considerable scrutiny on grounds of failing to deliver remunerative price to farmers, inadequate and poor infrastructural facilities resulting in huge post-harvest loss and wastage, complicating the process of doing agribusiness for private players, and fragmentation of supply chains with growing intermediation. These conditions together with supply issues have further resulted in skyrocketing inflation in food items which hurt the consumers, inadequate private investments in markets and infrastructure and increasing renting seeking practices. Consistent high food inflation has brought the state of agricultural marketing into the policy focus. The Economic Advisory Council to the Prime Minister (PMEAC) put forth the need to urgently implement the much-needed reforms of the Agricultural Produce Marketing Committee (APMC) Act (i.e. the provisions of the Model Act) at the state level. As a long term strategic intervention, National Democratic Alliance (NDA)-2 Government has announced the creation of National Agricultural Market (NAM) to simplify marketing operations and bring about

uniformity in fees/taxes and ways of doing agribusiness across states. Further to this, the Government proposed the Agricultural Produce and Livestock Marketing (Promotion and Facilitation) (APLM) Act, 2017 with an objective to push farm enterprise towards realizing the overarching goal of doubling farmers' incomes through integrated farming approach, particularly relevant to the marginal and small farmers.

Appropriate marketing reforms will create an enabling environment for both the farmers and private players, creating opportunities for greater investments, and bridging the gap between producer and consumer prices, thereby addressing the inflationary concerns. While marketing reforms which help create a win-win situation for the farmers as well as traders is most essential, it will be worthwhile to consider broader reforms that cater to farmers' access to credit, warehouse facilities, incentives for private markets and infrastructure, integrated linkages with farmers/farmer groups, use of technology to ensure transparency and accountability of practices. The idea of reforms is not to do away with mandis or the functionaries but to encourage competition (and render collusion, cartelization ineffective) and allow market forces (to a large extent) to determine the future of agriculture marketing, going forward.

It is interesting to note that by and large Indian agriculture is commercialized and markets have been playing an increasingly important role. Except for a significant part of grain that is procured by the public sector, much of the high value produce is routed through open markets. This makes it imperative to ensure that marketing practices are efficient driven by competition irrespective of their being controlled by the government or the private sector.

Study objective

It is important to recognize that in a changing environment where farmers have better access to information and bargaining power, and the private sector is better positioned to invest and participate in agriculture, policies and institutions need to evolve to address the new challenges. The key objectives of the study are as follows:

Firstly, look at the current status of agricultural marketing in India with respect to the Model Act (amended APMC Act) at the individual state level, and its impact on current functioning of markets and various stakeholders (farmers, traders, intermediaries).

Secondly, scope for alternative marketing channels viz. farmers' markets, terminal markets and those led by private players such as direct marketing, contract farming, etc that address the challenges faced in traditional market channels and delivering higher returns to the farmers and fair price to the consumers.

Thirdly, role of other institutions and policies to ensure greater marketing efficiency and seamless integration of markets and movement of agricultural commodities thereby benefitting the farmers, consumers and the buyers.

Lastly, with the roll-out of the National Agricultural Market (NAM), understand its scope of realizing the goal of a single unified agricultural market that delivers maximum benefits to the farmers and enhance availability of produce seamlessly across the country.

Scope of study

The study focuses on the following key segments:

Evolution of Agricultural Marketing Reforms in India to understand the genesis of marketing reforms in India in terms of various reforms adopted over a period of time to respond to the then prevailing circumstances.

Model APMC Act and Status of Implementation by States to understand the extent to which the provisions of the Model Act have been adopted and the rules framed thereafter. For states which have not adopted the Model Act, identify the reasons which have not allowed reforms and the institutions and incentives that will allow reforms in the future.

Mandi Survey in Delhi and Punjab to understand how mandis function given the provisions of the APMC and Model Act; role of various stakeholders (commission agents, buyers and sellers, and committee officials); impact on the functioning of various stakeholders; and scope for change and improvement. Also, test the relevance of certain provisions of the Model Act and the extent to which these are imperative for infusing efficiency in the marketing system.

Tomato Price Formation Analysis to understand the different marketing channels that exist; the levels of mark-up and how a particular chain and the intermediaries therein determine the price paid by the consumer at one end and that received by the farmer at the other end.

Onion Marketing Chain in Maharashtra to understand the price realization by the farmers operating through the mandi system and nature of their dependency on intermediaries focusing on their need for credit.

Alternative marketing channels including private sector led models that are functional alongside the government regulated markets (mandis) to understand how these channels function differently and the impact on the returns to farmers and other stakeholders.

Rolling out of National Agricultural Market (NAM) which is an ambitious program of the Government of India in creating a single unified agricultural market to help farmers benefit from higher price discovery and according greater ease of doing business for the private companies.

Roadmap for Reforms - Pointers or Future Policy Action

Study methodology

The study is based on both secondary and primary information analysis.

- An in-depth literature review of existing studies and media coverage on agricultural marketing and value chain analysis has been undertaken to understand the lens of analysis and interpretation of findings thus far.

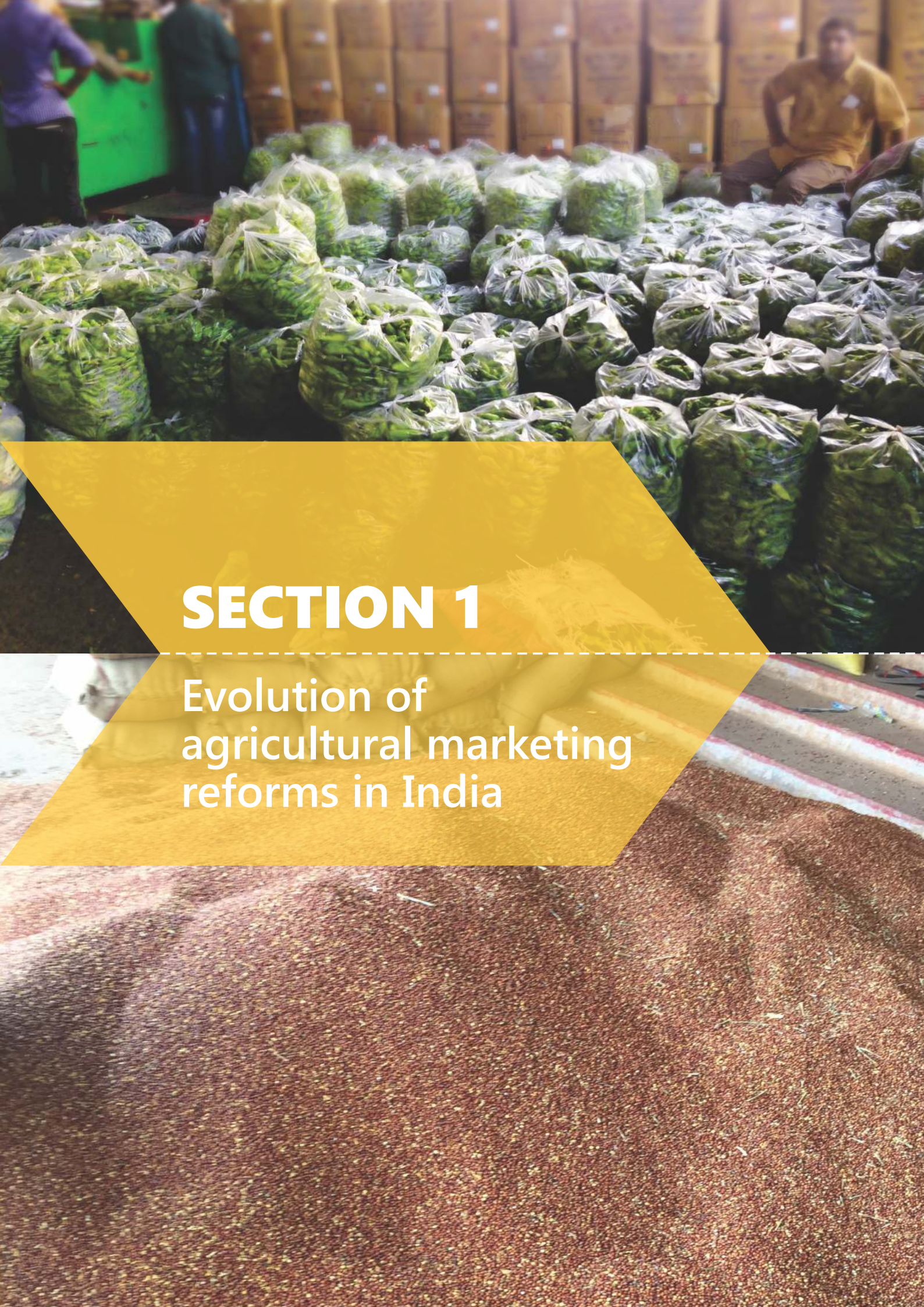
- Secondary analysis of information available with government marketing offices and those available in the public domain related to the Model Act, alternative marketing channels including private sector led models and relevant data has been undertaken.

- Primary surveys at the mandi and village level across 2 states comprising of 400 stakeholders each, have been undertaken to study the functioning of the mandis, the perception about the mandi system among various stakeholders, the visible advantages and disadvantages of the system and their impact on the stakeholders have been undertaken.

- One-on-one interviews with state marketing boards and committee officials to understand the latest policy decisions/notifications and their vision about the future of agricultural marketing has been undertaken.

- Market visit and stakeholder interaction in 2 states – Telangana and Himachal Pradesh across 10 markets to understand the roll out of e-NAM in these markets and the experience of the stakeholders – farmers, traders, commission agents and market committee officials in this context.

- Secondary information analysis and industry interviews were undertaken to capture alternative marketing models including private sector led agribusiness models such as farmers' markets, terminal markets, direct marketing, contract farming, rural business hubs and the like.



SECTION 1

Evolution of agricultural marketing reforms in India

1.1 Evolution of reforms

Policy interventions directed at agricultural marketing have not been a new phenomenon in India. The present agricultural marketing system in India is the outcome of several years of Government policy intervention. The system has undergone a series of changes due to the increase in marketed surplus, increase in urbanization and income levels and consequent changes in the pattern of demand, increase in linkages with overseas markets and changes in the form and degree of Government intervention.

The importance of an efficient agricultural marketing system was recognized way back in the 1920s when the Royal Commission on Agriculture first stated the need for an efficient marketing system in 1928. Several measures were adopted to improve the agricultural marketing situation in the country even before Independence.

Key pieces of legislation included:

- Establishment of the Directorate of Marketing and Inspection (1935)
- The Agricultural Produce Grading and Marketing Act (1937)

Post independence, the major focus of the Government policy related to agricultural marketing was to protect the interest of farmers and to provide them remunerative prices to increase the production of agricultural commodities. Recognizing the problems of low price realization by the farmers, higher marketing costs and considerable post-harvest losses in agricultural produce in the entire value chain, State Governments, mostly during the sixties and seventies introduced several mandatory regulations. One of the important regulatory initiatives was taken up for Regulation and Development of Agricultural Produce Markets for regulating the marketing practices in primary wholesale markets.

Most of the states (except Jammu and Kashmir, Kerala, Manipur and small Union Territories such as Dadra and Nagar Haveli, Andaman and Nicobar Islands, Lakshadweep, etc) consolidated the older colonial laws by enacting new legislations – the APMC Acts (Agricultural Produce Marketing Act) to provide regulation of agricultural markets by building up, restoring and institutionalizing a network of physical markets where transactions take place in a fair and transparent manner. The State Agricultural Marketing Boards (SMBs) were created to execute market development expeditiously. Regulated markets or mandis and the APMCs (Agricultural Produce Marketing Committees) were established in each state in notified areas by the respective state governments where transactions were mandated to take place. The elected boards and committees were made up of representatives of all stakeholders including the government.[2] The basic purpose of these APMC Acts was to regulate trading practices, bring about increased market efficiency through reduction in market charges, eliminate superfluous intermediaries and protect the interest of the farmers by enabling them to offload the produce at remunerative prices at the market yards.

Currently, agricultural marketing in the country is serviced through a network of 22,505 Rural Primary Markets (RPMs) and the number of regulated markets which stood at 286 at the time of independence, has now increased to 7,114 (March 31, 2014).[3]

Over the years, a number of organizations and institutions have also been established with a developmental mandate for one or more areas of agricultural marketing, such as procurement, storage and warehousing, credit, co-operative marketing, exports, food processing, agricultural prices, marketing training, research and extension.

The Central Government further enacted laws to regulate different aspects of agricultural activity in the country.
These included,

- Forward Contracts Regulation Act (1952)
- Essential Commodities Act (1955)
- Prevention of Black Marketing Act (1980)
- Maintenance of Supplies of Essential Commodities Act (1980)

[2] India's Agricultural Marketing: Marketing Reforms and Emergence of New Channels; Nilabja Ghosh, 2013
[3] http://www.agmarknet.nic.in/RMS2014.pdf

1.2 Agricultural marketing: Inefficiencies of the system

While the basic objective of the individual State APMC Acts remained the same, they also differed in several aspects. Several states initiated steps for amending their APMC Acts/Rules with the changing needs, but there were variations in the adoption of the content and coverage of reforms to the APMC Acts/Rules across the states/UTs. Agricultural marketing on the whole suffered from systemic and operational inefficiencies (Table 1.1).

Table 1.1 Issues in Agricultural Marketing

Areas	Details
Notifying commodities	• The manner of notifying commodities as "agricultural produce" for regulation vary between States
Problems with State APMCs	• Wide variations in the composition and functioning of the Marketing Boards and Agricultural Marketing Committees across states • Regular elections of APMCs do not take place • APMCs have emerged as monopolies • Limited success achieved in providing transparent transactional methods/marketing practices • Late payment to farmers a common feature
Poor Infrastructural Amenities	• Roads, storage and warehouse, electronic weigh bridges, etc are not adequate in many markets • Provisions for sorting and grading are not advanced • Basic hygiene and cleanliness of market premises are poor • Basic provisions such as price display boards are mostly non-functional • Congestion in markets lead to delays in offloading produce
Supply chain of agriculture products highly fragmented with a large number of intermediaries[4]	• Traders/wholesalers, commission agents, pre harvest contractors etc • On an average there are 5-6 intermediaries between the primary producer and the consumer • The total mark up in the chain ~60-75%. • As a result, the primary producers receive only a fraction of the consumer price
Lack of warehouse and cold storage facilities result in high post-harvest losses	• Total post-harvest losses (crops and livestock produce) pegged at Rs 92,651 crores at 2014 wholesale prices[5] • Cold storage units have been recorded to exist in less than one tenth of the markets • Grading facilities is less than one- third of the markets
Overload of marketing charges/fees and multiple taxes which vary across states[6]	• APMC market fees range between 0.50% to 2.0% of the sale value of the produce • Inter-state movements attract dual levy of market fees. • Commission charges vary from an average of 1% to 2.5% for food grains and 4% to 10% for fruits and vegetables (officially) • Service charges for weighing, loading-unloading • Inter-state taxes, purchase tax, rural development cess, entry tax, etc

[4] Kashmir alone has 3000 commission agents. The fruit Mandi of Sopore, (Asia's largest fresh fruit market after Azadpur in Delhi) has 500 commission agents
[5] http://pib.nic.in/newsite/PrintRelease.aspx?relid=148566
[6] In Haryana, the cost of grain transaction adds up to 10.5%; in Punjab14.5%; in Gujarat 3% (GoI 2013)

Areas	Details
Complex Marketing Licensing System	• Need to obtain multiple licenses within the same state • Process extremely cumbersome • Different mandis for fruits and vegetables often require more than one license with variation in terms of validity of license /preconditions • Some market committees require the applicant to own either a shop or a warehouse in the mandi to be able to apply for a license
Malpractices prevail	• Speculation and hoarding practices prevalent, leading to prices spikes[7]

Source: *secondary analysis based on media reports and published studies*

1.3 Model Act 2003 (Amended APMC act)

Against this backdrop, it was increasingly realized that the government monopoly of regulated wholesale markets had not assisted in the development of a competitive market system in the country. It did not provide the requisite help in terms of direct marketing, organized retailing, and smooth flow of raw material to agro processing industries or adoption of new and innovative marketing technologies. There was also a persistent demand for expediting reforms in agricultural marketing in order to facilitate private sector investment in this important area.

Based on the recommendation of the Expert Committee for Agricultural Marketing (Government of India, 2001), the Inter-Ministerial Task Force (Government of India, 2002) recommended the formulation of a Model APMC Act for this purpose. Accordingly, the Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India, in consultation with State Governments, trade and industry formulated a Model APMC Act and circulated to the States during 2003 for its adoption. In order to facilitate State/UT Governments to frame Rules, the Ministry of Agriculture in consultation with the stakeholders framed Model APMC Rules and circulated this to all States during 2007 for their guidance.

The Model APMC Act in principle follows the framework of the existing APMC Acts with modifications and additions to facilitate direct marketing, giving farmers freedom to sell their produce, contract farming, streamlining existing market functions (through scope for rationalization of taxes, transparent price discovery, cutting out intermediation, etc) and modifying the role of APMC from a regulator to a development focused institution. The draft model legislation was titled the State Agricultural Produce Marketing (Development and Regulation) Act, 2003. The salient features of the Act are summarized in the table below:

[7] Eg. The 2014 episode of price spikes in potato and onion (55% increase) in the main markets in the country was attributed to widespread hoarding practices. Estimates show that about 3-3.5 million tonnes of onion was stored either with the farmers or traders. (http://www.domain-b.com/economy/general/20140617_inflation.html)

Table 1.2 Salient Features of the Model Act 2003

Category	Salient Features
Vision	• Transition from market regulation to market development
Types of markets and access	• Markets to be set up by legal persons, growers & local authorities and not just state government • No compulsion on growers to sell their produce through APMC markets • Separate provision made for notification of Special Markets or Special Commodities Market in the market area for specified agri commodities in addition to existing markets • Purchase of agricultural produce through private yards or directly from agriculturists in one or more than one market • Establishment of consumers'/ farmers' market to facilitate direct sale of agricultural produce to consumers. • Resolving of disputes, if any, arising between private market/ consumer market and Market Committee.
Market fees	• Imposition of single point levy of market fees and discretion provided to state government to fix graded levy of market fee on different types of sales • State Governments conferred power to exempt any agricultural produce brought for sale in market area, from payment of market fee.
Licensing of market functionaries	• Licensing of market functionaries is dispensed with and a time bound procedure for registration is laid down. • Registration for market functionaries provided to operate in one or more than one market areas.
Commission agency in market transactions	• Commission agency in any transaction of notified agricultural produce involving an agriculturist is prohibited and there will be no deduction towards commission from the sale proceeds payable to agriculturist seller.
Role of State Agricultural Marketing Board	• Setting up of a separate marketing extension cell in the Board to provide market led extension services to farmers • Promoting grading, standardization and quality certification of notified agricultural produce and for the purpose to set up a separate Agricultural Produce Marketing Standards Bureau • Funds of the State Agricultural Marketing Board permitted to be utilized for promoting either on its own or through public private partnership • Market survey, research, grading, standardization, quality certification • Development of quality testing and communication infrastructure. • Development of media, cyber and long-distance infrastructure relevant to marketing of agricultural and allied commodities.
Role of APMC	• APMC is responsible for ensuring transparency in pricing and transaction • Providing market led extension services to farmers • Same day payment to farmers • Promoting agri processing • Public access to data on arrivals and price • Setup and promote PPP in management of markets • Market Committees permitted to use its funds to create facilities like grading, standardization and quality certification; to create infrastructure on its own or through public private partnership for post-harvest handling of agricultural produce and development of modern marketing system.

Category	Salient Features
Appointments	• Appointment of CEO of market committee from among professionals • For the Chairmanship of State Agricultural Marketing Board, two options provided namely Minister in charge of Agricultural Marketing as ex-officio or alternatively to be elected by the Chairman/ members of Market Committees.
Contract Farming	• New chapter on contract farming - compulsory registration of all contract sponsors, recording of agreements, resolution of disputes (if any), exemption from levy of market fees on produce covered by contract farming agreements, and indemnity provided to producers' title/possession over his land from any claim arising out of the agreement • Model specification of contract farming agreements provided • Direct sale of farm produce to contract farming sponsor from farmers' field without the necessity of routing it through notified markets.

Source: *http://agricoop.nic.in/sites/default/files/apmc.pdf*

The Model Act 2003 clearly has not been effective in achieving the desired objectives of delivering higher prices to farmers due to partial implementation of the Act at the state level and large number of states not adopting the Act that allows direct market marketing between farmers and buyers; streamlining market intermediation; rationalization of taxes and fees, the indirect burden of which falls on the farmers in terms of a cut in the price he receives. However, ground level evidence suggests that it is not the Model Act alone which can deliver the benefits to the farmers in terms of higher prices and assured sale of the produce he brings to the market and/or to the consumers in terms of competitive prices, improved availability and better quality fresh produce. Marketing related infrastructure and services are most critical for farmers to ensure that they are able to get a price for their produce which is remunerative and allows them to invest in farming and harvesting activities. Infrastructure such as village level collection centres, warehouse and storage (especially controlled temperature infrastructure for perishables), advanced transportation (reefer vans, cold trucks); facilities of sorting, grading and packing as per prescribed standards (depending on the type of markets the produce caters to in terms of size, colour, etc) could help farmers significantly in avoiding distress sale and transacting very small quantities which often do not fetch higher prices.

While it is true that farmers have access to information to prevailing market prices through mobile SMS services and other means not just within the district or state but bigger markets across India, whether they are able to use this information to their benefit and negotiate better prices is questionable. Particularly, for perishables as this study focuses on, farmers often do not have the choice (due to lack of infrastructure and services) to hold on to the harvest till market demand surges and in an effort to at least cover the costs, sells it in the market.

Market intermediation and the role of the commission agents in agricultural markets have been central to the policy discourse and any reform thereon focusses on streamlining the same and further to abolish intermediation. However, a reality check will indicate that although it should be the direction of reforms, achieving the same in the near future will be a herculean task calling for a mission mode intervention at all levels of the value chain. The stronghold of the commission agents has been established over decades of their presence in the markets, undertaking risks and engagement with the farmers in various forms ranging from lending advances for buying seeds and other inputs, assured sale of produce, guaranteed payment to the farmers even before the buyer makes the payment and so on. While this is true, the fact that the farmer is not taken advantage of, cannot be ruled out and in many cases farmers

have to share the loss and/or pay for the risks that the commission agent takes on his behalf without his knowledge.

In the recent scenario of large private players (from organized retail, wholesale and exports) connecting directly with the farmers, the economics of direct procurement has not worked out very well and these players rely more on the markets and hence the commission agents, traders for daily assured supplies. Although not studied in depth in this context, the overall observation has been that only private players who deal in exports which require specific quality of produce have an incentive to invest in backward linkage to ensure that farmers grow the right type of produce as per the specifications related to shape, size, and quality. The buyers are also willing to pay a premium for the right quality produce. However, the challenge arises when the domestic market price rises in the case of commodities which have a domestic market and farmers want to sell at the higher price in the market and not necessarily confine himself to the private buyer. Also, there are instances when the produce is not as per the specification and the buyer is unable to procure all the produce from the farmer at the pre-agreed price and the produce does not have a robust domestic market.

The propositions of the earlier Model Act in terms of greater market liberalization and according freedom to the farmers to sell to anyone they want to, has surely not come through in a very impactful manner and there are several issues as summarized above that have come up which need to be addressed to make marketing reforms more effective. Till date, regulated APMC markets play an important role in terms of providing a common platform for the farmers to trade and contain instances when fly by night operators cheat the farmers and even in the case of regulated markets cheat the commission agents who undertake the risk on behalf of the farmers. Unless the organized players scale up their sourcing in a massive way through common service provider model (a professionally managed aggregator) that procures on behalf of the major players, and there is a mechanism of covering the risks of the farmers, any piecemeal effort will not be effective in terms of delivering higher prices to the farmers along with ensuring their income security. The policy reforms need to distinguish between abolition of market intermediation and doing away with geographical boundaries termed as market yards and sub-yards. Abolition of intermediation should be done within the APMC markets in which case buyers need to make same day payments to the farmers; come in adequate numbers in the market and purchase from the farmers directly. Doing away with physical markets will actually help farmers save on transportation costs, commission fee, etc but will require a process that ensures the buyers who collect the produce from the farmers' field or village level collection centres are credible entities registered with the state marketing board or at the national level with some basic criteria so that they can be tracked. With market liberalization, the role of governance will assume greater importance, particularly to safeguard the interest of the farmers.

1.4 Agricultural produce and livestock marketing (promotion and facilitation) (APLM) Act 2017[8]

Against the backdrop of the review of the impact of the Model Act 2003, Shri Radha Mohan Singh, Hon'ble Union Minister of Agriculture & Farmers' Welfare constituted a Committee on 12th August 2016 to draft a Model Act that would look at marketing in a more holistic manner and suggest a legal template. The committee was referenced to examine and address the entire gamut of post-production activities and recommended a Model Act that can push farm enterprise towards realizing the vision of the Hon'ble Prime Minister to double the income of farmers. The new Model Act aims at building a level playing field for both public sector and private sector players to enter into the domain of agriculture marketing and build appropriate market structure; and provide a framework that catalyses fair conduct and performance of marketing to the advantage of farmers in particular and consumers in general.

The proposed Agricultural Produce and Livestock Marketing (Promotion and Facilitation) (APLM) Act 2017 strives to achieve similar goals of market liberalization bringing in livestock into the regulated marketing regime given the policy thrust on farmers' adopting integrated farming system which includes crops, livestock and fisheries for enhancing income security. Interestingly, the Act has broad based the definition of markets to include warehouses, cold stores, and silos to integrate farmers directly as sub yards to improve farmers' access to markets. The proposed Act also aims at infusing competition amongst different market types (regulated markets, private markets, etc) and the players therein to the advantage of the farmers.

The salient features of the APLM Act are as follows:

- Abolition of fragmentation of market within the State/UT by removing the concept of notified market area in so far as enforcement of regulation by Agricultural Produce and Livestock Market Committee (APLMC) is concerned (State/UT level single market)
- Full democratization of Market Committee and State/UT Marketing Board.
- Disintermediation of food supply chain by integration of farmers with processors, exporters, bulk retailers and consumers
- Clear demarcation of the powers and functions between Director of Agricultural Marketing and Managing Director of State/UT Agricultural Marketing Board with the objective that the former will have to largely carry out regulatory functions, while the latter will be mandated with developmental responsibilities under the Act.
- Creation of a conducive environment for setting up and operating private wholesale market yards and farmer consumer market yards, so as to enhance competition among different markets and market players for the farmer's produce, to the advantage of the latter.
- Promotion of direct interface between farmers and processors/exporters/ bulk buyers/ end users so as to reduce the price spread bringing advantage to both the producers & the consumers.
- Enabling declaration of warehouses/ silos/ cold storages and other structures/space as market sub–yard to provide better market access/ linkages to the farmers.
- Giving freedom to the agriculturalists to sell their produce to the buyers and at the place & time of their choice, to whom so ever and wherever they get better prices.

[8] http://agricoop.nic.in/sites/default/files/APLM_ACT_2017_1.pdf

- Promotion of e-trading to enhance transparency in trade operations and integration of markets across geographies.
- Provisions for single point levy of market fee across the State and unified single trading licence to realise cost-effective transactions.
- Promotion of national market for agriculture produce through provisioning of inter- state trading licence, grading and standardization and quality certification.
- Rationalization of market fee & commission charges.
- Provision for Special Commodity Market yard(s) and Market yard(s) of National Importance (MNI).
- Providing a level playing field to the licensees of private market yard, private market sub-yard, electronic trading and direct marketing vis-à-vis the APLMCs and removing the conflict of interest that the latter are likely to practise, if both development and regulatory functions are centred in the same authority.

The proposed Act reiterates and carries forward the earlier provisions of the Model Act 2003 in terms of rationalization of fees and taxes; introducing single levy of market fees; promoting disintermediation and hence direct linkage between farmers and buyers, greater democratization of the APMC and separating the roles of the market developer and governance authority. While the proposed Act talks about disintermediation i.e. doing away with the role (or the mandatory role) of the commission agent, it also proposes that the commission fees should be restricted to 2 per cent in the case of non-perishables and 4 per cent in the case of perishables as long as it is not charged to the farmers. It is not clear as to whether the proposed Act strives towards a gradual phase out of the intermediaries or aims at limiting the margins made by the commission agents but continue to exist in the marketing structure.

1.5 National Agricultural Market (NAM)[9]

On 1st July 2016, Government approved a Central Sector Scheme for Promotion of National Agriculture Market (NAM) through Agri-Tech Infrastructure Fund (ATIF) with a budget allocation of Rs 200 crore. This flagship initiative aims at creating e-market platforms in 585 selected regulated wholesale agriculture markets by March, 2018, known as e-NAM.

e-NAM is envisaged as a pan-India electronic trading portal, to be managed centrally by a lead implementing agency i.e. Small Farmers' Agribusiness Consortium (SFAC), which will network 585 selected markets within a span of three years (2015-16 to 2017-18) to create a unified national market for agricultural commodities. e-NAM is a virtual market but it has a physical market at the back end. While one-time registration of farmers / sellers, lot details at the entry gate, weighment, quality assaying, auctions / trade transactions, payment by buyers to sellers and other agencies involved in the chain of transaction will take place online on e-NAM, actual material flow will happen physically through the market. Entire arrivals of agricultural commodities selected for trading on e-NAM will be traded online only. A centralized software has been developed for e-NAM by Nagarajuna Fertilizers and Chemicals Limited (NFCL) and is provided free of cost to each market which has consented to join the national network, and necessary customization are undertaken to conform to the provisions of the relevant marketing regulations of each State.

[9]http://www.enam.gov.in/NAM/home/namguidelines.pdf

The main objectives of e-NAM are as follows:

- to initially integrate markets at the state level and then eventually across India through a common online market platform to facilitate seamless trade in agricultural commodities
- streamline marketing/transaction procedures and make them uniform across all markets to promote efficient functioning of the markets
- promote better marketing opportunities for farmers/sellers through online access to more buyers/markets, removal of information asymmetry between farmer and trader, better and real-time price discovery based on actual demand and supply of agri commodities, transparency in auction process, prices commensurate with quality of produce, online payment etc. that contribute to marketing efficiency
- establish quality assaying systems for quality assurance to promote informed bidding by buyers
- promote stable prices and availability of quality produce to consumers

Eligibility criteria for the states

NAM being linked to agricultural marketing reforms, states and union territories (UTs) need to undertake mandatory reforms in their respective Agriculture Produce Market Committee (APMC) Acts as follows:

I. Single trading license to be valid across the state

State/UT must provide, through appropriate legislation/executive order in consonance with the concerned APMC Act/regulation, for issue of single trade license to any eligible person from across India irrespective of one's domicile to enable one to trade through e-NAM portal in the markets across the state/UT. Further, state/UT must provide for a liberal process of single trade license for wholesale traders / buyers for the entire state and ensure that there are no barriers like prohibitively high security deposits or stipulations regarding minimum quantities to be transacted or requirements of establishment of purchase centre/premise, etc.

II. Single point levy of market fee across the state

State/UT must provide, through appropriate legislation/executive order in consonance with the concerned APMC Act/regulation for single point levy of market fee for wholesale trading of same produce across the State i.e., levy of market fee/cess at point of first transaction only in the State. No further market fee/cess/service charge, or by whatever name it is called, should be leviable on subsequent wholesale transaction (s) of the same produce.

III. Provision for e-auction/ e-trading as a mode of price discovery to be facilitated

State/UT must provide, through appropriate legislation/executive order in consonance with the concerned APMC Act/regulation, that State Agricultural Marketing Department /Directorate/ Board, as the case may be, and concerned APMC/RMC shall provide necessary legal framework therefor and required infrastructure connected thereto to promote National Agriculture Market (e-NAM).

Proposals from such States/UTs meeting above three pre-requisites received on prescribed pro-forma will be considered for sanction of one-time grant for purchase of hardware, internet connection, assaying equipment and related infrastructure to make the market ready for plug in with e-NAM platform.

States/UTs, which either do not have marketing regulation or have one which is not in force, in order to integrate with e-NAM portal and avail grants under the scheme, must identify some institution/organisation and frame appropriate legally enforceable guidelines. The entity so identified may develop the appropriate physical infrastructure required for e-trading on e-NAM at back end and provide required logistic support. Regulatory framework/legally backed guidelines may include all the required provisions for trading on e-NAM portal including enlisting/registration of traders/buyers, transaction fee etc. The proposals of private markets for providing access to e-NAM portal may also be considered by the Project Appraisal Committee (PAC) provided they are recommended by the competent authority of the concerned State/UT. However, in such cases they must provide for mandi analyst, related hardware, assaying facilities and other support services at their own cost.

e-NAM related infrastructure

State Government and UT administration will ensure that that APMCs/RMCs integrated with e-NAM have all infrastructural facilities like hardware, internet connectivity, e-auction hall, assaying laboratory, required manpower, training and awareness, etc. as needed to implement e-NAM; APMCs/RMCs will provide infrastructural facilities and services relating to registration, cleaning, sorting, grading, assaying, IT, internet connection of minimum 5-10 MBPS (indicative requirements); provide facilities for installation of computer hardware/printers along with UPS/ generator to ensure availability of uninterrupted power supply, cabling, setup and configuration of LAN; make available room/desk/space for support staff deployed for successful rollout and also operation and maintenance of e-NAM for initial hand holding of market functionaries; set up e-auction hall equipped with computers for uploading of buy quotes/bids by traders and large monitor/projector with Internet access. Concerned APMC/RMC will further provide suitable space for training sessions for farmers, traders, commission agents and market staff to be organized from time to time; provide at least one electronic weighbridge of appropriate capacity within market yard premises.

In addition, such APMC/RMC may also notify electronic weighbridges outside market premises, whose weight certificate of empty/loaded truck/ trolley and gross weight will be valid for on-line trading of commodities on e-NAM platform; take necessary steps to integrate the entire market operations right from gate entry till exit of transacted commodity. As, eventually, especially for out station buyers, logistics would be an important consideration, APMC/RMC would do well to ensure that efficient and cost-effective logistics are available for the clients of the market. APMC / RMC should also provide all logistic support of storage and incidental thereto for unsold agricultural produce, sold produce to be dispatched or produce brought for selling through e-NAM platform requiring such support inside the market premises on minimal charge basis.

National Informatics Centre (NIC) will be responsible for hosting of e-NAM software on Meghraj cloud; providing and maintaining all the necessary infrastructure including virtual machines (servers), base operating systems, firewall, load balancers, SMS and email services, etc as per policies of NIC/DeitY applicable from time to time.

Designing and implementation of e-NAM

The Strategic Partner (SP) – Nagarjuna Fertilizers and Chemicals Limited is responsible for designing, developing, testing, implementing, maintaining, managing, enhancing and modifying the set of applications and modules of e-NAM platform. SP is responsible for implementing e-NAM, in the selected markets of different states/UTs in an effective and time bound manner. The role and activities of SP as described in the Request for Proposal (RFP) inter alia, includes- design, develop and implement e-NAM platform, which will comprise major modules such as masters and administrations; gate entry – exit management; lot management; quality assaying management; bid management; e-tender / e-auction portal; weighment integration; sale agreement and sale invoice; payment gateway integration; email/SMS integration; and reports and MIS.

The SP is responsible for ensuring that application including its entire functionality is running and is available at all times as per the criteria defined in RFP; fixing of software faults in a time bound manner as described in RFP; maintenance of the complete code base of e-NAM platform including all versions of the software, system documentation in all respects as described in RFP and up gradation of the code base; processing of data requests received from SFAC in time bound manner; modification and enhancements in software within agreed time frame and system integration testing; maintenance of application performance as per scope of work; provide ground level support to SFAC and markets by deploying support staff as detailed in the RFP / agreement; SP will set up a help desk that will answer queries and handle/escalate issues reported by the users during business hours. The help desk shall function on all days on which markets are functional; SP shall make suitable provisions in the e-NAM software to provide /generate such daily and periodic MIS reports as may be required by various stake holders viz. SFAC, DAC&FW, APMCs etc. from time to time.

Funding and other support for developing e-NAM

e-NAM provides an initial allocation of Rs 200 crore and provides a host of other support services to help states adopt the new marketing model:

- Assistance to APMCs/RMCs is subject to approval of Project Appraisal Committee (PAC).
- State/UT/their agencies may apply for approval of Detailed Project Reports (DPRs) and grant under the scheme. Proposals for all selected APMCs/RMCs in the states/ UT shall be routed through the State Government/UT administration in the prescribed format along with all supporting documents.
- e-NAM software will be provided to states/UTs free of cost.
- Department will give grant as one-time fixed cost to the States/UTs up to Rs.30.00 lakh per market, based on their DPR for purchase of hardware, internet connection, assaying equipment and related infrastructure to make the market ready for integration with e-NAM platform. State Government/UT/their agencies would bear balance fund requirement, if any, for making arrangement for electronic trading in proposed markets.
- SFAC, the Lead Implementing Agency (LIA), through Strategic Partner (SP) identified for implementation of e-NAM, will depute free of cost one

person at each market, for a period of one year to provide day to day hand holding support to stakeholders for its successful implementation. If this support is required to be continued further, concerned market will be required to bear the cost of such person/support. Private markets however will have to bear the cost of mandi analyst from the beginning.

- Based on the availability of funds and the number of projects submitted by states/UTs, Department may decide to put a cap on the number of markets that may be covered in this scheme from each of the State/UT.
- States/UTs will be required to submit Utilization Certificate in the form of GFR 19A, within a period of one year in respect of the grant released to them.
- The funds received under the Scheme cannot be utilized for any purpose other than for integration of the approved markets with e-NAM and no diversion of funds is permitted.
- The scheme will be subject to audit by Comptroller and Auditor General (CAG) of India.

E-Payments and settlements

- Once the trade has been confirmed, primary invoice will be generated automatically by e-NAM software which can be accessed by the traders from the respective dashboard or from the one sent to the winning bidder on email/SMS or manually. The winning bidder will deposit the amount calculated as per the sale agreement, which will include market fee, commission agent's charges, loading / unloading / packaging charges etc., as applicable. Winning bidder will be able to deposit the amount on-line into a settlement account using RTGS /NEFT or through on-line payment gateway provided on e-NAM.
- Once the funds are received by e-NAM, a confirmation message will be sent to the farmer-seller/commission agent. Depending on the terms of delivery, the winning bidder will be required to take the delivery of goods at the APMC market either by himself or through an authorized agent or logistics provider. Buyer can also request the commission agent/seller to dispatch the goods through a transporter identified by him on Freight to Pay basis at his own risk and cost Freight, insurance charges etc. to be paid by the buyer.
- Funds due to be paid to the farmer-seller/commission agent and other beneficiaries like APMC, service providers, etc. will be transferred to their respective bank accounts registered with e-NAM after acceptance of delivery by the buyer or his representative within one business day by the bank operating the e-NAM account upon on-line approval from concerned APMC.

Commodity parameters and assaying standards and facilities

Directorate of Marketing and Inspection (DMI) will formulate and recommend tradable parameters, for the notified agri-commodities proposed to be traded on e-NAM, to the Government for its approval. It will provide technical advice/ support to the State Agricultural Marketing Department/Directorate /Board/ APMC/RMC for establishing quality assaying laboratory and related apparatus and issues incidental thereto; frame and release required standards and specifications for assaying laboratories; manpower requirements and other activities incidental thereto; equip human resource and lay down the procedures for approval of assaying Laboratories. State Agricultural Marketing Board (SAMB) will make available adequate cleaning,

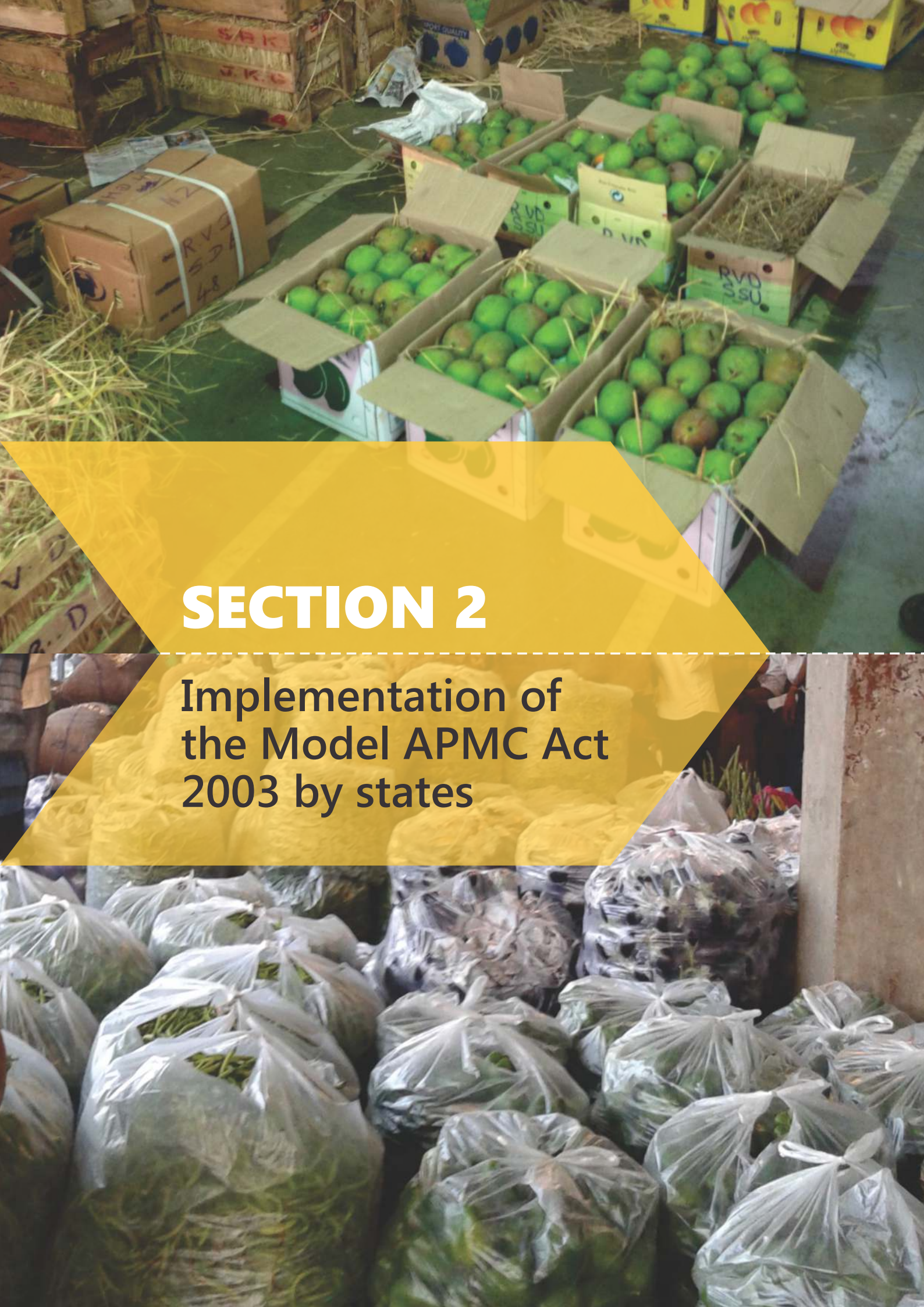
sorting, grading and quality assaying facilities. Agricultural Produce Marketing Committee/ Regulated Marketing Committee (APMC/RMC) will set up Quality Assaying Laboratory with skilled manpower to ensure quality assaying of produce offered for sale on e-NAM compulsorily. Such labs shall be approved by an Agency notified by the Department/ State; promote third party assaying labs duly approved by an agency notified by the Department/State; put in place a system of quality assaying wherein no farmer is charged for the assaying services.

Awareness and capacity building programs

The training and awareness material will be prepared by the Strategic Partner (SP) in consultation with DMI and SFAC and will be revised / upgraded regularly. The SP will also train market related officials, farmers, commission agents, traders, employees of markets, data entry operators and such others as may be necessary for successful operation of e-NAM; carry out appropriate promotion and marketing activities to enhance acceptability and usage of e-NAM portal amongst various stakeholders; APMC/RMC will be responsible to undertake training and capacity building programs.

Grievance and dispute settlement

The State Agricultural Marketing Board (SAMB) will be responsible for putting in place a well-structured Dispute Resolution Mechanism (DRM) for handling disputes arising out of transactions on e-NAM. APMC/RMC will provide a suitable dispute resolution mechanism with respect to assaying, weighment and e-payment related matters and issues incidental thereto, reported by sellers, buyers and other service providers with respect to trades on e-NAM at APMC / RMC level. In case of any dispute relating to these guidelines, the interpretation of Department shall be final and binding on all concerned parties.



SECTION 2

Implementation of the Model APMC Act 2003 by states

2.1 Status of implementation of the Model Act by States

After the formulation of the Model APMC Act, there was an attempt by some of the states to revise their respective APMC Acts in accordance with its provisions. While none of the states amended their existing APMC Act fully, several states implemented some of the provisions of the Act either by amendments or ordinances or simply by allowing certain practices without any change in their respective Acts. So far, only 16 states have amended their APMC Acts and only six states have notified the amended Rules. There are some states which do not have the APMC Act and some have partially amended their Act.

Table 2.1 Status of Implementation of the Model Act by States (as of March 2016)

Sl. No	Area of Reforms	States which have adopted the suggested area of marketing reforms
01	Establishment of private market yards/ private markets managed by a person other than a market committee.	Andhra Pradesh, Arunachal Pradesh, Assam, Chhattisgarh, Gujarat, Goa, Himachal Pradesh, Karnataka, Maharashtra, Mizoram, Nagaland, Orissa (excluding for paddy / rice), Rajasthan, Sikkim, Telangana, Tripura, Punjab, UT of Chandigarh, Jharkhand, Uttarakhand, West Bengal .
02	Establishment of direct purchase of agricultural produce from agriculturist (Direct Purchasing from producer)	Andhra Pradesh, Arunachal Pradesh, Assam, Chhattisgarh, Gujarat, Goa, Haryana (for specified crop through establishment of Collection Centres) Himachal Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Mizoram, Nagaland, Rajasthan, Sikkim, Telangana, Tripura, Punjab (only in Rule), UT of Chandigarh (only in Rule), Jharkhand, Uttarakhand and West Bengal. U.P. (Only for bulk purchase under executive order issued time to time)
03	To promote and permit e-trading,	Andhra Pradesh, Chhattisgarh, Gujarat, Jharkhand, Haryana, H.P., Karnataka, Rajasthan, Sikkim, Goa, Madhya Pradesh, Maharashtra (has granted license to Commodity Exchanges registered under FMC), Mizoram, Telangana, Uttarakhand.
04	Establishment of farmers/ consumers market managed by a person other than a market committee (Direct sale by the producer)	Arunachal Pradesh, Assam, Chhattisgarh, Gujarat, Goa, Himachal Pradesh, Karnataka, Maharashtra, Mizoram, Nagaland, Rajasthan, Sikkim, Tripura, Jharkhand, Uttarakhand and West Bengal.
05	Contract Farming Sponsor shall register himself with the Marketing Committee or with a prescribed officer in such a manner as may be prescribed.	Andhra Pradesh, Arunachal Pradesh, Assam, Chhattisgarh, Goa, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Karnataka, Maharashtra, Madhya Pradesh, Mizoram, Nagaland, Orissa, Punjab (separate Act), Rajasthan, Sikkim, Telangana, Tripura, Uttarakhand.
06	Single point levy of market fee	Andhra Pradesh, Rajasthan, Gujarat (for processor, grader, packer, value addition and exporter), Goa, Himachal Pradesh, Chhattisgarh, Karnataka, Madhya Pradesh, Nagaland, Jharkhand, Sikkim, UT of Chandigarh, Punjab, Mizoram, Telangana, Uttar Pradesh and Uttarakhand.

Sl. No	Area of Reforms	States which have adopted the suggested area of marketing reforms
07	Single registration/ license for trade/ transaction in more than one market	Andhra Pradesh, Goa, Gujarat, Haryana, Himachal Pradesh, Karnataka (in Rules only), Rajasthan, Chhattisgarh, Madhya Pradesh, Maharashtra, Mizoram Nagaland, Telangana ((in Rules only), Sikkim.

Source: *http://pib.nic.in/newsite/PrintRelease.aspx?relid=137359*

2.2 Updates on reforms of the APMC act by states: select criteria

Though various States/ UTs have taken initiatives to bring about reforms in their existing APMC Acts, the pace of reforms has been slow and uneven across states.

An attempt has been made to look at the progress of reforms of the APMC Act at the individual state levels in accordance with the provisions of the Model Act with respect to the criteria listed below:

A. Status of market fee levy on commodities

B. Delisting of Fruits and vegetables (F&V) from the APMC Act

C. Removal of levy of dual market fee across states

D. Commission fee charged across states

E. Replacement of the Licensing System

F. Delink license issue to own shop criteria

G. Waive off market fee on transactions outside market yards and sub yards

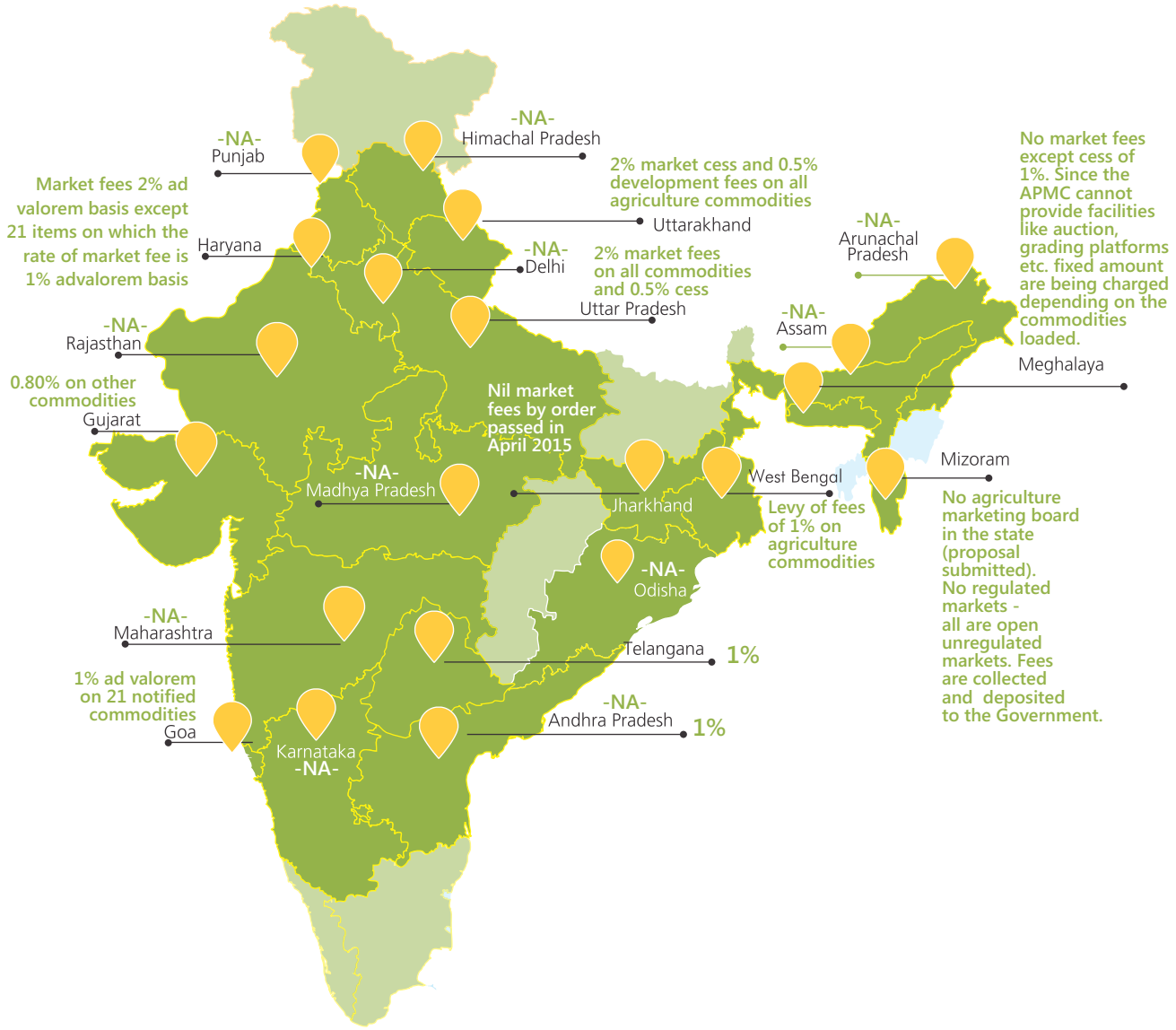
H. Allow direct marketing between farmers and buyers

Inputs were directly sought from the State Marketing Boards for the current status of reforms on these criteria. While some of the states were forthcoming with their inputs, information was not available from the others.

A. Status of market fee levy on commodities

As noted earlier, APMCs (Agricultural Produce Market Committees) are authorized to collect market fees. Inputs from the State Marketing Boards reveal that for most of the states where latest information was available, market fees range between 0.80-2 per cent. Punjab has the highest level of market fee and rural development fund charges of 4 per cent followed by Uttar Pradesh and Uttarakhand which have combined market fees and cess of 2.5 per cent. Jharkhand has waived its market fees by an order passed in April 2015.

Map 2.1: Current Status of Market Fee Levy – All Commodities (States and All Commodities)



Source: *information sourced from state marketing boards and government websites*

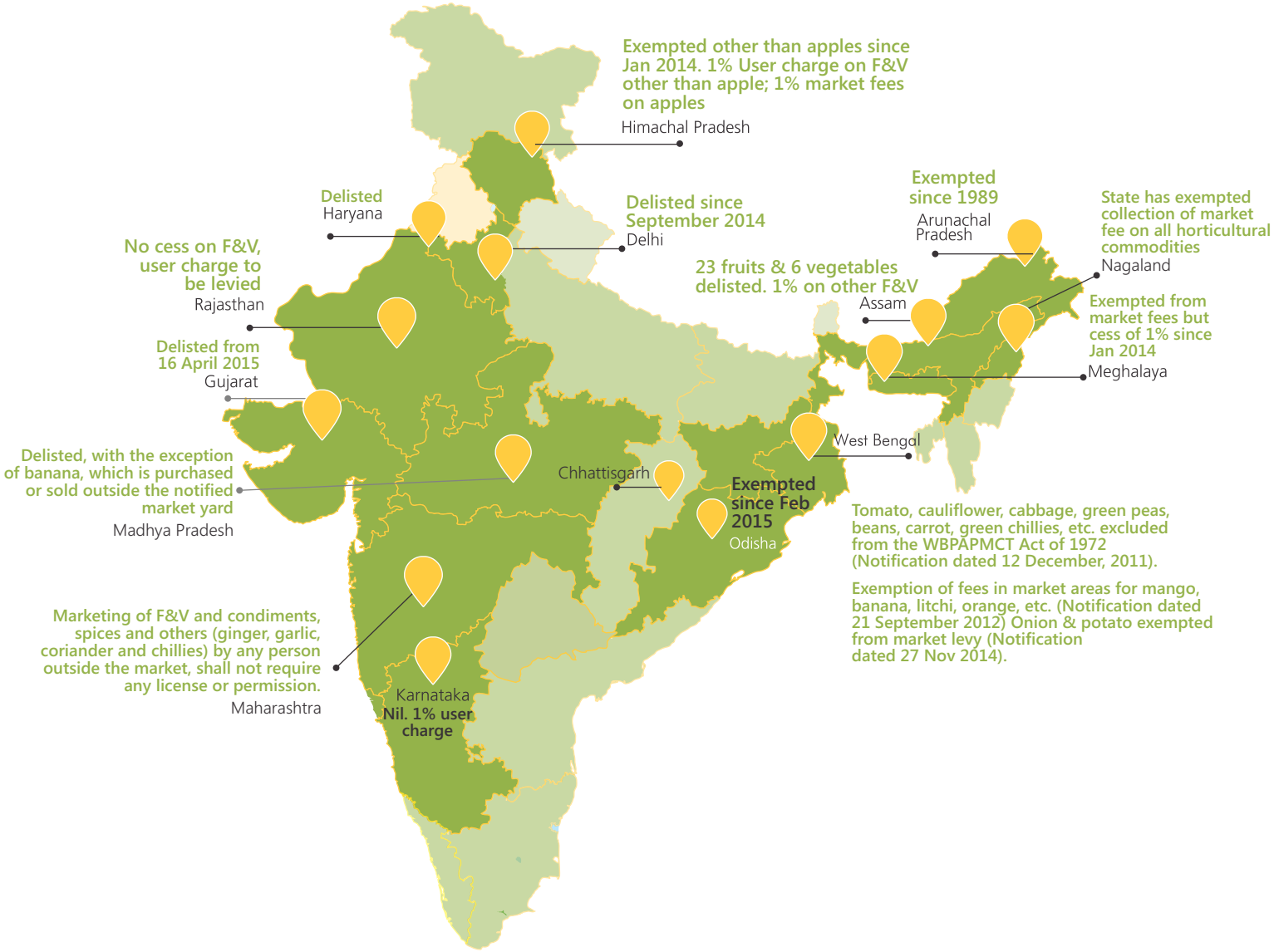
B. Delisting of fruits and vegetables (F&V) from the APMC act

During 2013-14, when food inflation soared, it was suggested that fruits and vegetables that are highly perishable and create inflationary pressures be removed from the APMC list of commodities that are to be traded mandatorily through the government regulated market yards. This implied, fruits and vegetables could be marketed directly between the farmer and buyer beyond the mandi and such a transaction would not attract market fees. Also, it would help save on the fees paid to the commission agents for facilitating such a transaction thereby improving the margins and the net returns to the farmer.

Taking the cue, some of the states went ahead and delisted fruits and vegetables from the APMC Act, while others are in the process of announcing the same and bringing about the notification. Presently, 14 States have deregulated fruits and vegetables from APMC Acts, though in different models. In Bihar, Kerala, Manipur

and Union Territories (except Chandigarh), there is no APMC Act hence there is no regulation on marketing of Fruits and Vegetables. Further, in Sikkim, Mizoram and Arunachal Pradesh APMC Acts are not implemented.

Map 2.2: States that have Delisted F&V from APMC List (Fruits and Vegetables)



Source: *information sourced from state marketing boards and government websites*

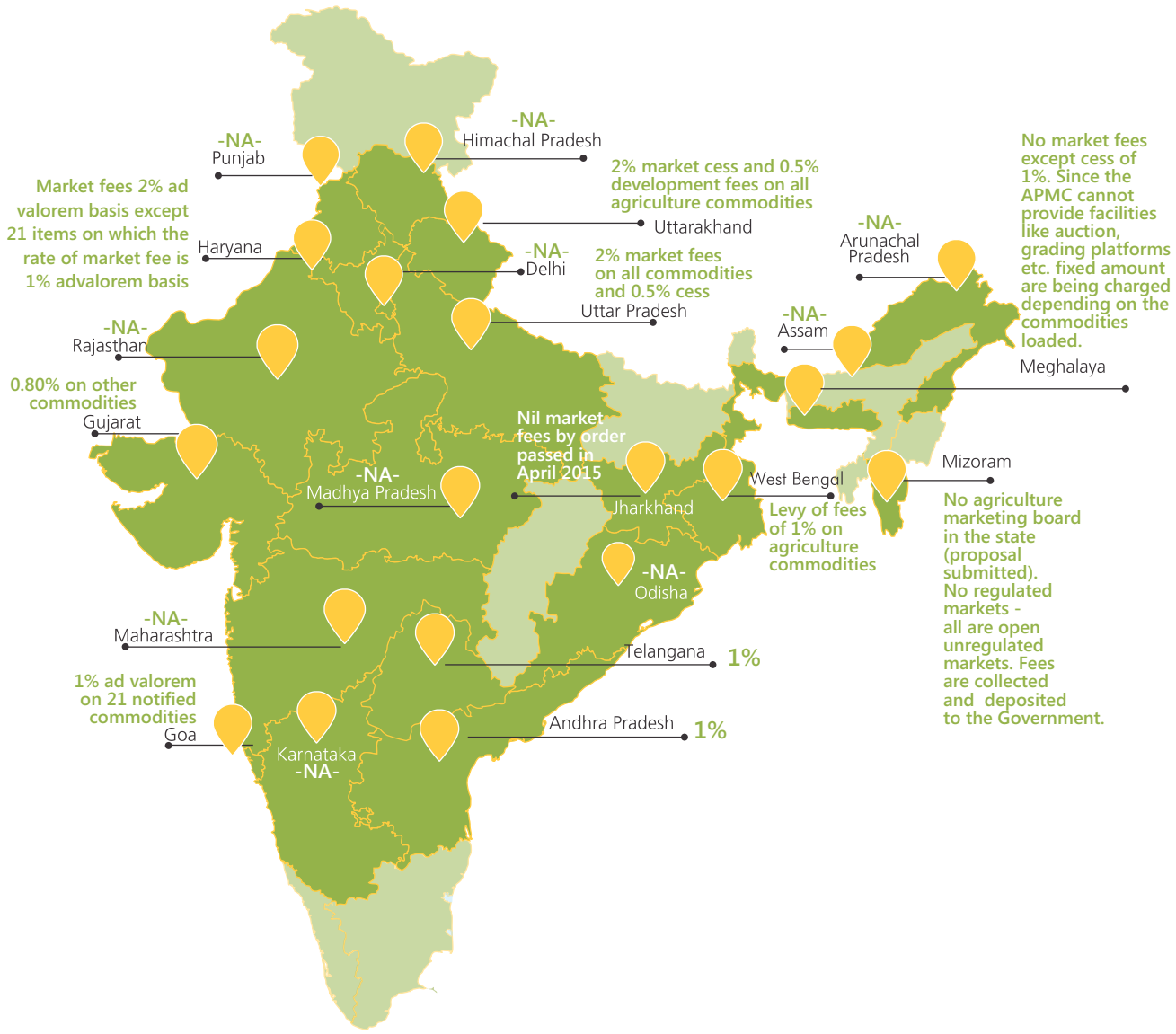
C. Removal of levy of dual market fees across states

The current practice of dual levy of market fees for movement of commodities across states is of concern and has a dampening impact on business sentiments. Particularly, for transactions that do not involve utilization of market facilities and services in the destination states, levying of market fees do not make sense. For instance, a commodity sourced in Punjab at 4 per cent market fees (including charges for rural development fund) if brought into Uttar Pradesh will again attract market fees of 2.5 per cent. This is applicable even if the buyer uses the commodity for processing or retailing without going through the mandi. While there is no economic rationale to such market levies, it is widely practiced by states because of the revenue generated from such transactions. Any attempt to abolish dual levy of market fees will have revenue implications for the states which need to be addressed failing which such basic anomalies are likely to exist. Delisting of fruits and vegetables from the APMC list, addresses this issue to some extent. The creation of a unified market will eventually help simplify the multiplicity of fees charged on market transactions.

D. Commission fees charged across states

Inputs from State Marketing Boards reveal that Commission fees are highest in Maharashtra at 10 per cent on fruits and 8 per cent on vegetables followed by Gujarat at 7 per cent and Delhi at 6 per cent. It is interesting to note that some states (Arunachal Pradesh, Assam, Goa, Jharkhand, Madhya Pradesh, Meghalaya, Orissa and West Bengal) do not have commission agents. In Delhi, Punjab, Himachal Pradesh, Gujarat, and Uttarakhand, commission fee is charged from the buyer and not the seller unlike other states. Delhi brought about this reform and notified it in 2014 by virtue of which the commission agents are officially not allowed to charge any commission fees from the farmers. Instead they recover the same from the buyers. Gujarat, for long has not been charging commission fees on farmers coming to the mandis from within the state. In Maharashtra, government made a move to bring about this change but faced great resentment from the commission agents. Although the commission fee was brought down by 2 per cent, the payee was not changed from farmers to buyers. However, the change is still under consideration.

Map 2.3: Commission Fee Charges across States



Box 2.1 Can the system do away with commission agents?

While the model APMC Act stipulates prohibition of commission agents in any transaction of agricultural produce of the farmers, it would also be useful to assess the extent to which the system is dependent on commission agents. The commission agents charging anywhere between 4 per cent to 10 per cent fees for facilitating trade, play multiple roles. They provide loans/ advances to the farmers (particularly in the case of fruits); assure guaranteed purchase of the commodities (irrespective of quality considerations) and also take the associated risks. They play an important role in ensuring that the farmers get their dues and in case of disputes help seek redressal through the market committee. It is the relationship between the farmer – commission agent – buyer which determines how payments are settled, advances are recovered and the produce sold.

On one hand, lack of access to formal credit, backend inputs and services, and absence of buyback guarantees, has led to farmers being extremely dependent on commission agents and it is difficult to overhaul the system without ensuring availability and access to these facilities and inputs. On the other, the stronghold of commission agents in the mandis due to their political affiliation or cartelization is a factor to be encountered. The bargaining power of an individual farmer may not be strong enough or the distance from the mandi may compel a farmer to engage the services of a commission agent. Therefore, despite the commitment to reform on this issue, the practice of reliance on commission agents continues to prevail.

E. Replacement of the licensing system

The Model Act calls for replacement of the system of licensing for market functionaries by a time bound process of registration to be valid for one or more markets. States differ in their practice of issuing licenses for trading in markets. Inputs from the State Marketing Boards reveal that the need to obtain a license for every market is not practiced in Delhi and Gujarat. In Maharashtra on the other hand, licenses are issued for a single market area. However, there is no provision for a single nationwide license for obvious revenue reasons and also due to the absence of an integrated information system. This is likely to be addressed with the introduction the e-marketing platforms.

F. Delink license issue from "own shop" criteria

A common observation of the existing regulated markets and their operations also reveal the absolute lack of transparency on the criteria for obtaining a mandi license. It is cited that there is immense corruption and money making in the process of issuing a license which results in the stronghold of a handful of commission agents and wholesale traders and thereby collusion and cartelization. By the provisions of the original APMC Act (of the states) and the Model Act, application for a license to trade and the cost of the same involves a one-time lump sum fee and an annual renewal fee of Rs 100-200 and any individual who wishes to trade can obtain one. For commission agents, it is necessary to own a shop (on long lease) which can be resold further and involves a renewal fee of Rs 200-300.

Delhi has removed the "own shop" criteria for obtaining a license. In Maharashtra and Gujarat, while it is necessary for the commission agent to own a shop, it is not the same for the wholesale traders. To allow competition and restrict rent seeking and corrupt practices, it is important to do away with licensing and issue a permit or registration by virtue of which one can trade in the mandi. There should be other mechanisms to ascertain the credibility of the trader (either through bank guarantee and the like) and not necessarily tie it to the criterion of owning a shop.

G. Waive off market fees on transactions outside market yards and sub yards

Market fees are levied for the use of market infrastructure and services and paid to the APMC. The fees are in turn used by the Committee for market development and other costs associated with its functioning. The popular argument has therefore been that transactions which take place through contract farming, direct marketing and/or private markets should not be eligible for market fees. This provision is applicable for delisted fruits and vegetables as well. Currently, transactions outside the mandi for processing or export are exempted from market fees. In some cases, it is a direct exemption while for others it is a reimbursement.

H. Allow direct marketing between farmers and buyers

One of the key provisions of the Model Act is to promote direct marketing through contract farming, famers' market and/or private markets. While several states have allowed for direct marketing, the pace of progress has been somewhat slow. Delhi announced the creation of Kisan Bazaar (farmers' market) where farmers can directly sell to the buyers (2014). Maharashtra has already issued several licenses for private markets and allows for direct marketing. These emerging alternative marketing models and are still to come up to the scale to be able to compete with the mandis.

Box 2.2 Doing away with the APMC act: Lessons learnt from Bihar

The state of Bihar repealed the APMC Act with effect from the year 2006 and privatized its marketing infrastructure. This move was believed to open up possibilities for farmers to offer their produce for sale to anyone with the best price offer, to organized retail and carry out contract farming. However, the reform did not yield the expected benefits. The existing market infrastructure created earlier by the Bihar State Agricultural Marketing Board in the State are used by the Traders who operate from their shops allotted to them on rent. The Nodal Officer (SDM) is in-charge of the unregulated markets and no market fee is charged from the farmers. However, other charges towards loading/unloading/Hamal are in vogue. However, in the absence of any regulator/ facilitator, these unregulated markets are deprived of development of marketing infrastructure and may become inhospitable and exploitative to the users in course of time.

The state government by its own admission has no record of market arrivals and market prices of the agricultural produce ever since the repeal of APMC Act in 2006. Thus, farmers have been left at the mercy of traders and have not been able to accomplish better prices. The state has not been able to any attract large scale private investments into agricultural marketing after the repeal of the Act. The common argument that the market structure under APMC does not permit the entry of new players cannot be considered as entirely valid as evident in the case of Bihar where even after seven years, the state has not seen any revolution in agricultural marketing.

SECTION 3

Survey findings from selected mandis in Delhi and Punjab

3.1 Survey of mandis in Delhi and Punjab

A primary survey of stakeholders comprising traders and commission agents operating in the mandis, was carried out for Delhi and Punjab. The purpose of the survey was to understand the nature of trading, mode and time taken for payments, state of infrastructure and the dependence of the farmers and traders on commission agents in the mandis of the respective UT/State, against the backdrop of the ongoing reforms of the APMC Acts.

Questionnaires were fielded to 900 stakeholders (500 from Punjab and ~400 from Delhi). The survey was carried out for the Azadpur mandi in Delhi and six mandis in Punjab – viz. Jalandhar, Faridkot, Firozpur, Zira, Amritsar and Gurdaspur. The rationale for taking a single mandi in Delhi vis a vis six mandis in Punjab is the fact that in terms of commodity arrivals and value of transactions the Azadpur mandi in Delhi is comparable to and perhaps bigger than all the mandis put together in Punjab. Azadpur is also the largest F&V mandi in Asia.

Table 3.1 Key Findings: A Snapshot

	DELHI	PUNJAB
Duration of Operation of traders	**Limited new entrants** • More than 75% of traders operating for more than a decade	**Fairly large focus on new entrants** • Only 28% of traders operating for more than a decade
License to trade	**License is required to trade,** despite amendment of clause that required owning a shop for a license to trade • However, Mashakors who do not have a license, exist	**Not apparent** if it is necessary to own a shop for a license. • While nearly all CAs have a license, less than 2% traders reported having a license
PAYMENTS		
Mode of payments	**Majority of payments are done in Cash**, with some in cheque & bank transfer	**Majority of payments are done in Cash**, with some in cheque & bank transfer
Time taken to settle payments	Settlements are based on relationship of CAs with farmers & buyers • For farmers who take advances from CAs, settlement is done post sales	Settlements are based on relationship of CAs with farmers & buyers • Duration could take 2-8 weeks
Determinants of payment settlement	Multiple factors govern settlement: • Commodity type • Relationship with seller • Availability of cash • Outstanding loan amount by farmer	Multiple factors govern settlement: • Commodity type • Quantity/value of transaction • Relationship with the seller

	DELHI	PUNJAB
FEES		
Market fees paid	1% market fees* paid by the buyer to the CA who in turn deposits with the APMC Committee *not levied on fruits and vegetables presently.	**4%** market fees is paid by the buyer to the CA who in turn deposits with the APMC Committee
Commission fees paid	Against fixed commission fees, it varies: • Tomato: 6% to 11% • Onions: 6% to 8% • Chilies: 10% In some cases, the cost of loan is included in this fee In most cases, **fees are charged from both farmer & buyer** – against the notification	Against fixed commission fees, it varies: • Apples, potato, onions, peas tomato, banana, cauliflower: 5% to 9%
Who should pay fees to CAs	**Farmers,** as the CAs provide loans and make swift payments Buyers are reluctant to pay – according to majority traders	**Majority didn't have an opinion.** However some felt farmers should as CAs provide loan and in some cases they are not aware of such fees
Rationalization of Commission fees	While all paid commission fees, 50% felt that such fees should be abolished while few felt that it could be reduced	While all paid commission fees, **22%** felt it should be abolished, while >40% felt that it fair to charge a fees, 29% felt it could be reduced
MARKET REACTION		
Perception about CAs	Near unanimous opinion about CAs - **integral part of the mandi; lifeline for farmer** – provides advances, assured sale, timely payment	**About 15% of respondents felt that CAs are not needed in the system.** While others felt that they are an integral part of the mandi and lifeline for farmer
Interaction with organized players	• About **30%** CAs & traders reported organized players coming to the mandi to buy • Nearly **37%** reported - an increasing trend over past 5 years • Almost none found any impact on price	• **Negligible response** on interaction with organized players in the markets surveyed • Hence **no impact** on price and/or quality of produce
Consumer demand for quality produce	Consumers demand quality produce – as observed by majority CAs and traders The desired quality is available in the mandi – via **grading & sorting; tie-up with farmers and traders**	**No explicit demand for quality produce** reported

	DELHI	PUNJAB
INFRASTRUCTURE		
Infrastructure facilities	**Basic facilities** (like notice board, price display monitor) **are often not functional** Traders/CAs are not satisfied with the quality of warehouse, roads, etc	**Basic facilities** (like notice board, price display monitor) **are unavailable** Warehouse, fire extinguishers, rest house etc are **missing in certain cases.** Users not satisfied with the quality of warehouse, roads, electricity supply, etc
APMC INTERACTION		
Interaction with Committee Officials	Traders/CAs have **good interaction with Committee officials** - take their grievances to them and are addressed adequately	Negligible interaction with Committee officials. Hence, little scope for voicing grievances and their getting addressed
Connect between Marketing Board & Committees	Traders/CAs & APMC officials are **aware of notifications** brought out by the Board (DAMB) However there is **lack of centralized information** – data related to arrivals by commodity, sales, stakeholders are available with respective APMC	**Visible disconnect between Board & respective APMC** – often unaware of new notifications, nature of fees & taxes **Lack of centralized and updated database** with the Board
Forward Looking attitude of Board	Cognizant of challenges on ground • Dominance of CAs • Non transparency in price discovery, recording of transactions • Technology a key enabler to streamline marketing • Encouraging competition	No information

Source: *CII-FACE Primary Survey 2014-15*

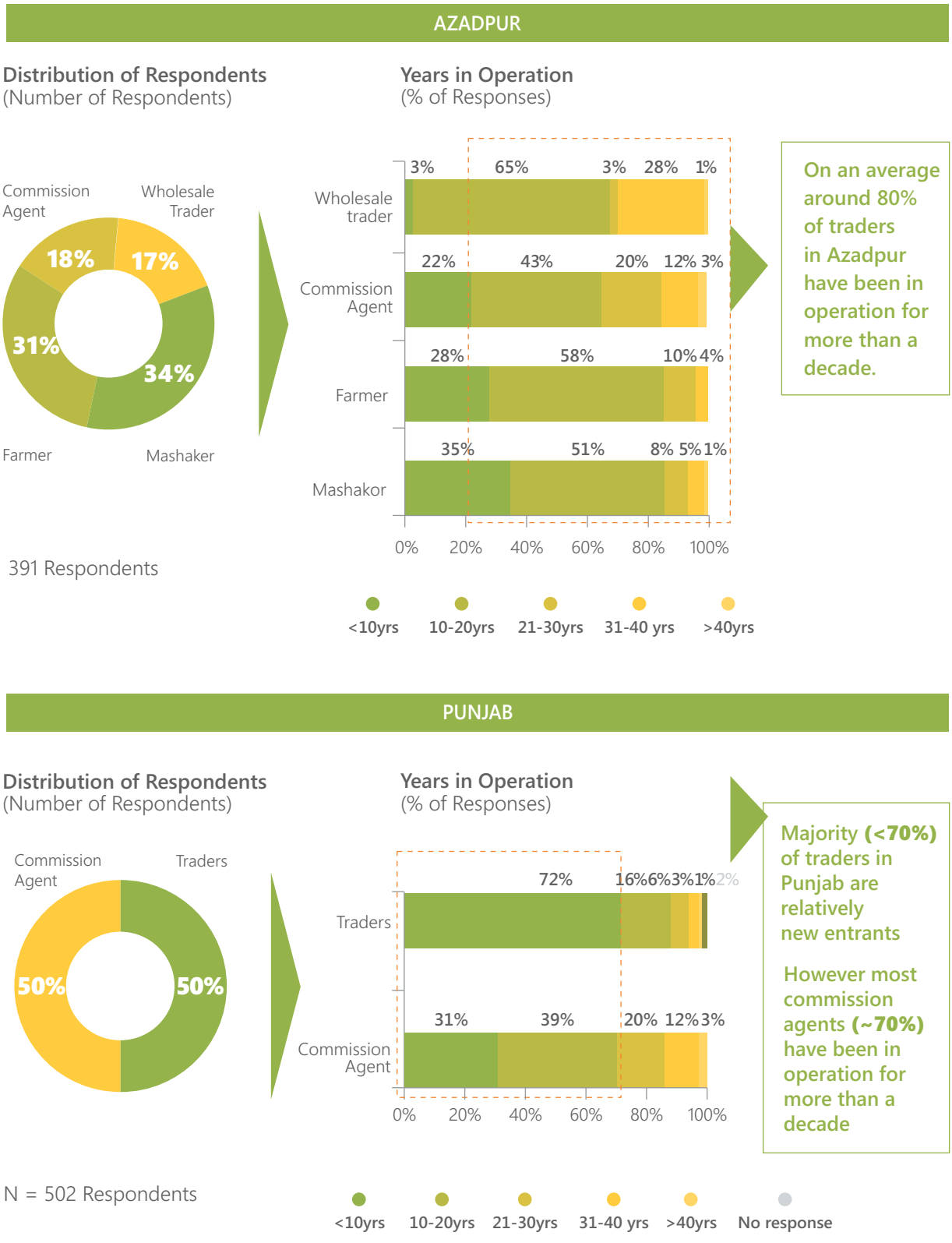
3.2 Detailed findings on select parameters

A. Time period of operation in mandis

Large wholesale markets are typically dominated by a group of commission agents and traders, who are generally involved in market operation across generations. This feature can be seen in the Azadpur market; where about 78 per cent commission agents, 97 per cent wholesale traders, and 65 per cent Mashakors (semi wholesalers who operate without license) have been operating for more than a decade.

In Punjab, however, only 28 per cent traders have been in operation for more than a decade, as opposed to 69 per cent commission agents. This indicates the possibility that there is no stronghold of traders in the markets surveyed in Punjab, and that there is a wide mix of traders who enter these markets for trade.

Figure 3.1 Years in Operation – Stakeholders in the Selected Mandis in Delhi and Punjab



Source: *CII-FACE Primary Survey 2014-15*

B. Mode of payment for market transactions

Cash remains the most common mode of payment, although other modes such as bank transfer and cheque payments are becoming popular.

In Azadpur, there are a significant number of commission agents and traders who make and receive payments in cheque and bank transfers. Given the increasing penetration of technology and access to formal banking, a large number of market functionaries are moving towards handling less cash. Further, farmers located in remote areas are now able to receive payments via bank transfer, due to increased access to banking.

In Punjab on the other hand, more than 90 per cent payments are made in cash, while a fairly small proportion are made and received via cheque or bank transfers. Given that traders in Punjab are relatively new entrants unlike those in Azadpur, a number of transactions are carried out in cash.

Figure 3.2 Modes of Payment made at the Selected Mandis in Delhi and Punjab

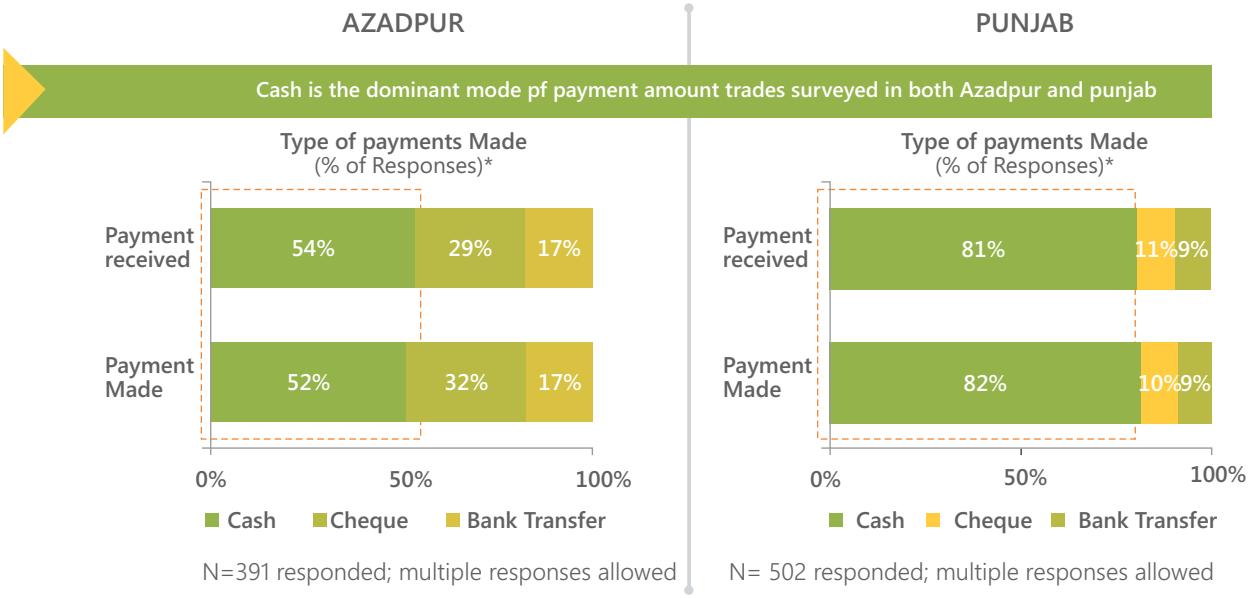
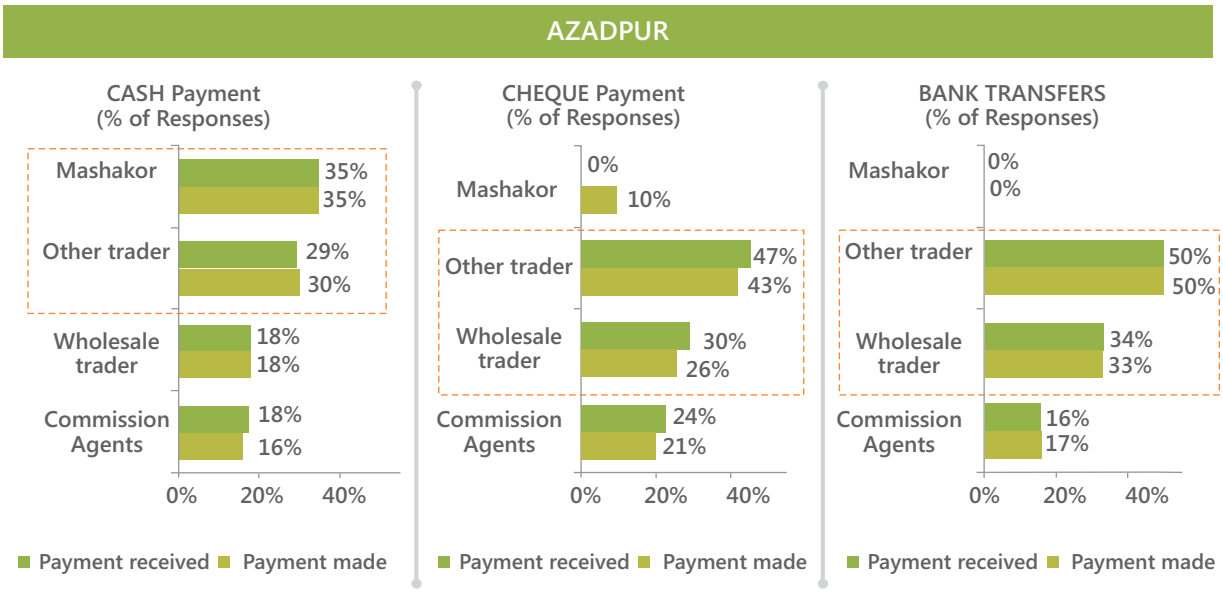
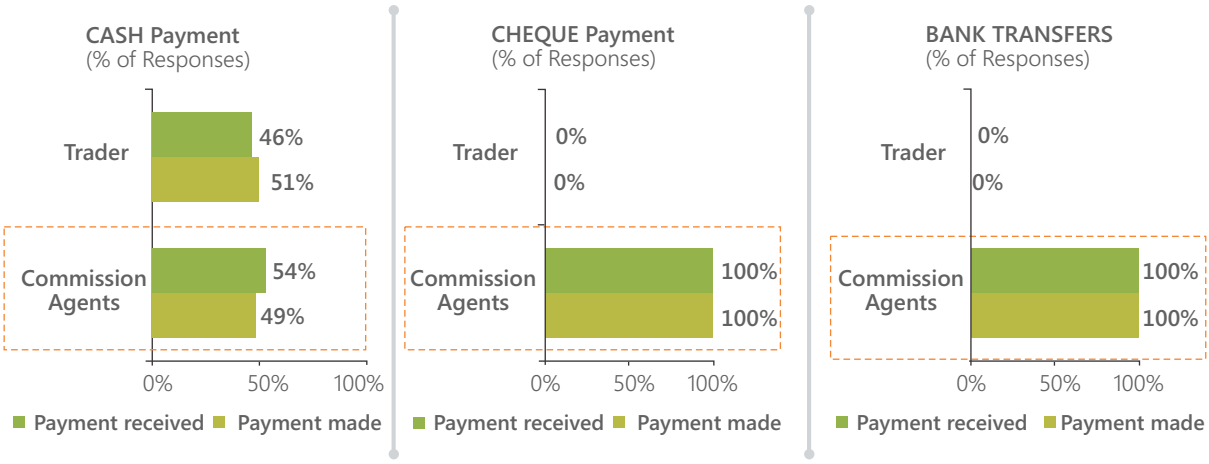


Figure 3.3 Time taken to make Payments in Azadpur Mandi in Delhi



N=391 respondents; multiple responses allowed

PUNJAB



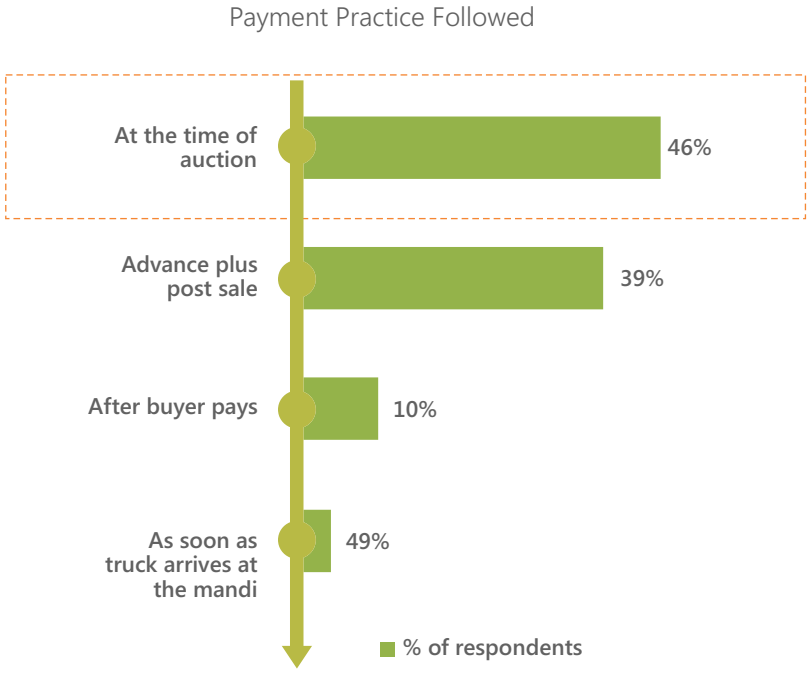
N=502 respondents; multiple responses allowed

Source: *CII-FACE Primary Survey 2014-15*

C. Time taken to settle payments

Time taken to settle payments is fairly quick, particularly those made by the commission agents to the traders and farmers who come to sell their produce in the mandi. In Azadpur, a majority of payments are undertaken within a few hours (at the time of auction). In Punjab, across the mandis surveyed, nearly 57 per cent of the payments made by the commission agents to the traders and farmers took place on the same day. While there were instances when the payments were made within four weeks.[10]

AZADPUR



N= 69 respondents

Source: *CII-FACE Primary Survey 2014-15*

[10]Responses in order of those observed in Azadpur were not documented and hence not reported.

D. Factors determining payments

In both Azadpur and Punjab mandis, the main factor determining payments is the type of commodity. Other factors such as loan amount payable, mutual relationship (built over the years), and availability of cash also influence payment decisions in Azadpur.

On the other hand, in Punjab, the value/quantity of transaction plays a much larger role than mutual relationship given that neither commission agents nor traders/farmers have a stronghold in the markets surveyed.

E. Role and perception of commission agents in the mandis

The survey also aimed to measure the opinion of traders/farmers about the commission agents. This helped assess how different stakeholders view the role of commission agents, in turn determining mutual dependence among stakeholders.

In Punjab, while most farmers considered commission agents integral to the system, around 15 per cent felt they were not required. Also, while most respondents declined to give their opinion on commission fees, around 13 per cent each responded that buyers are reluctant to pay fees and that they are often unaware of fees being charged to them.

Figure 3.4 Factors Governing Payment Settlement in Selected Mandis in Delhi and Punjab

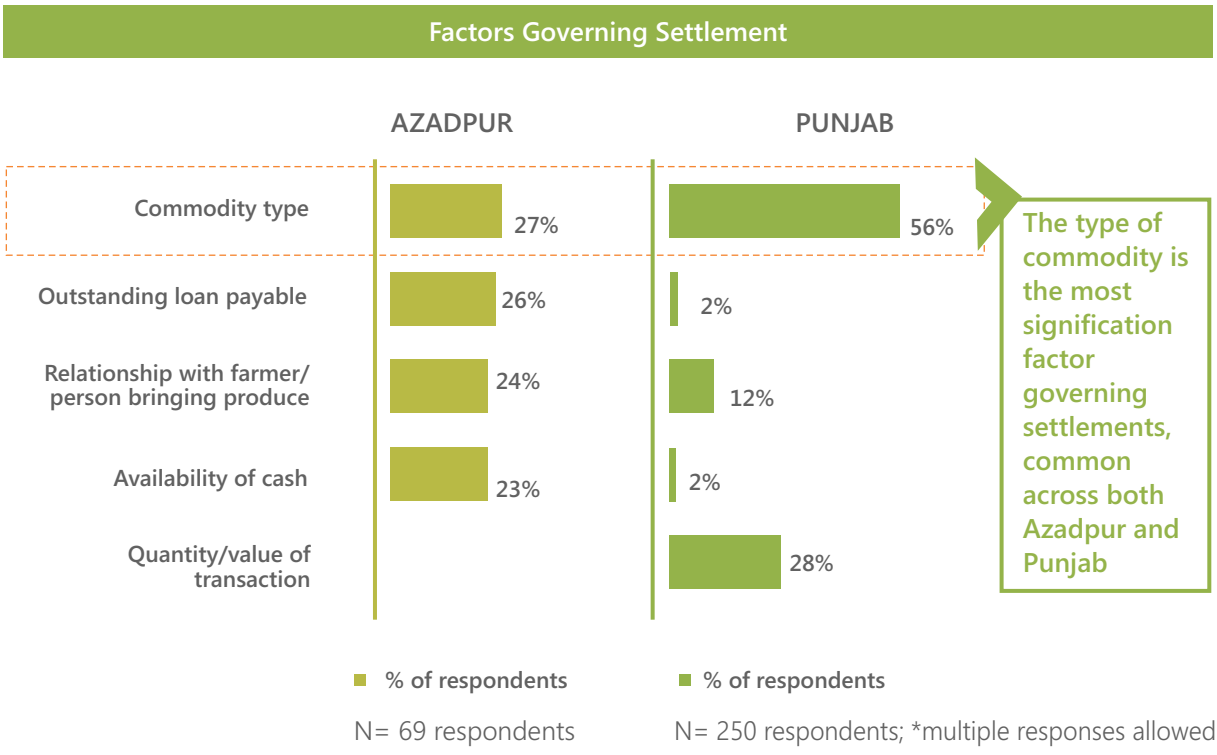
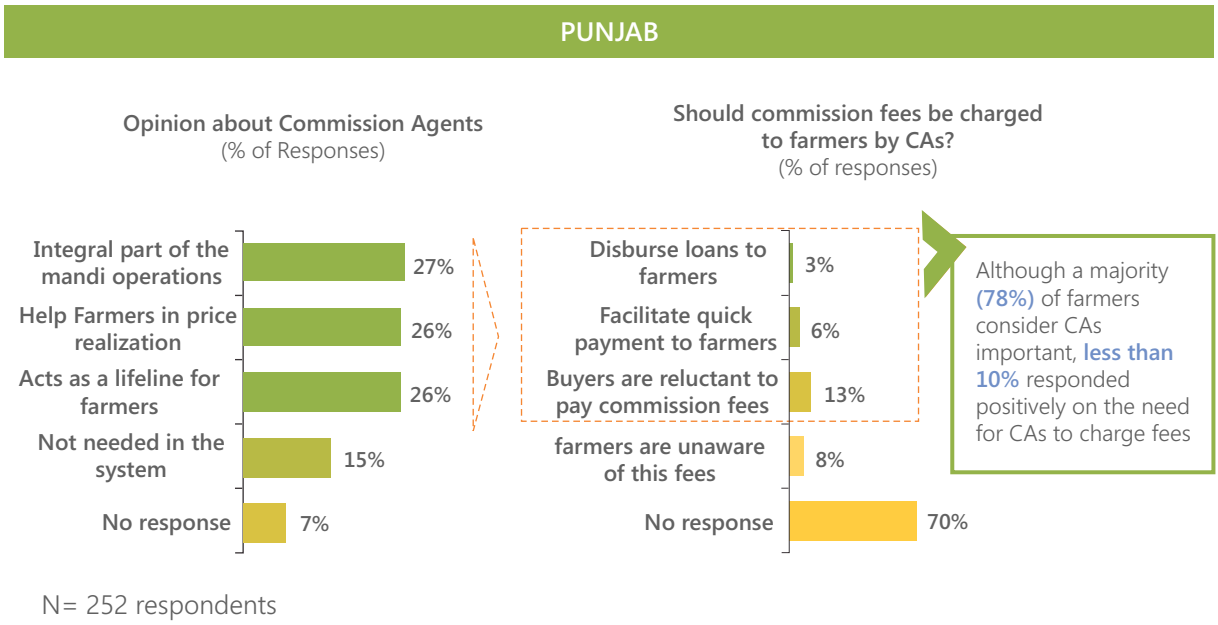


Figure 3.5 Opinion about Commissions Agents amongst Traders in Selected Mandis in Delhi and Punjab



N= 252 respondents

Section 4

Tomato value chain: A case study

4.1 Introduction

Tomato in the category of fresh vegetables witnesses sharp price fluctuations ranging from Rs 100 at the retail level to less than Rs 2 at the farmer end. This extreme volatility in prices is attributed to erratic supply owing to weather conditions and poor shelf life of tomato for which it cannot be stored. While tomato is processed into a host of value added products – puree, paste, peeled, dried, etc, it has not guaranteed farmers a better price during glut by mopping up excess supply for processing.

The price formation study on tomato was undertaken to understand the following

- various marketing chains that exist from farm to fork that influence price formation
- prevailing marketing margins that exist across the value chain nodes
- nodes therefore exercise most control on the margins across the value chain
- areas of policy intervention needed to identify opportunities for streamlining the chain

A study was conducted to understand the price formation in the tomato value chain in the Azadpur mandi based in Delhi. The price formation study was undertaken for tomato produce flowing through Azadpur mandi, tracing the flow upstream through the middlemen to the farmers and downstream through middlemen to end consumers. The study identified all activities involved at each stage of the value chain and surveyed the stakeholders for all related costs and margins. The published average modal prices for tomato was taken for the weeks of March and April (2015). Gujarat was identified as the state supplying the maximum produce to Azadpur during the study period. Villages around Gujarat were considered for the upstream study. The sample size was 100 collected across five categories viz. farmers, village aggregator and middlemen, commission agent at Azadpur mandi, wholesalers and retailers.

4.2 Survey analysis

The analysis traces the value chain costs and margins across the stakeholders. The data is presented in 3 segments of the value chain:

The analysis traces the value chain costs and margins across the stakeholders. The data is presented in 3 segments of the value chain:

Upstream: In the upstream value chain, the product flows from the farmer to village aggregator and local mandi middlemen upto the Azadpur mandi

Downstream: In the downstream value chain, the product flows from the Azadpur mandi to the wholesaler/ retailers.

End to End: In this, the information was combined for the value stream from farmer to the end consumer.

Table 4.1 Key Actors in the Tomato Value Chain

Key Actors	Description
Upstream Suppliers (US)	They provide input materials such as seeds, pesticides, irrigation systems, etc., to the farmers. They are located near the farms.

Key Actors	Description
Village Level Aggregators (Va_0)	Va_0 are mainly village level collectors or aggregators. Their main functions are sorting and grading, packing, consolidation, arranging transportation, coordination with local or distant mandi commission agents. Typically these aggregators are of 3 types; **Type 1** who consolidate on behalf of fellow farmers and perform many of the functions as above; **Type 2**, who are representatives of commission agents and **Type 3** -independent trading agents who tap into a catchment area and have forward linkages at various mandis across India. They are declining in numbers as most of the commission agents in the larger mandis are integrating backwards and now have their own representatives during the harvest season.
Middlemen at Local Mandi level (MM_1)	MM_1 are known as Middlemen at level 1. Their main function is to act as agents in the local mandis. Depending on the APMC market rules, they act as commission agents or traders. These traders have contacts in mandis across India and through them they trade the produce in larger mandis such as Azadpur, Chandigarh etc. They source their produce through their local village farmers or independent trading agents. They typically supply to the Azadpur mandi in truck loads containing 350+ crates. Normally they seek to maximize their margins and supply opportunistically. They charge (7-8) % as commission.
Middlemen at Azadpur Mandi- Aarthiyas (MM_2 & MM_3)	Middlemen at this level are commission agents at the larger APMC markets - in this case, the Azadpur mandi. These agents typically have backward linkages with MM_1 and VA_0. Based on the anticipated demand, they source the produce from various production centres through these agents as well as farmers. Their main functions are consolidation of produce from MM_1, facilitation of trade, quality assessment, financing, and information sharing. They provide the location for buyers and sellers for change of ownership of produce. In some cases, MM_2 also have transaction with external mandis and wholesalers in case of demand supply imbalance. In some cases there is a third layer of middlemen MM_3 that co-exists with MM_2 and shares the margins.
Wholesaler at Azadpur Mandi level (WS_2)	The wholesalers at the mandi level are represented at WS_2.Their main activities are sourcing the produce from MM_2. These wholesalers supply to large hotels, caterers and food processors, etc. They perform the functions of grading & sorting, and shipping to the consumer sites. In some cases, wholesalers may be linked to distributors to take care of the downstream supply. Over time there has been a diffusion of MM_2 and WS_2 due to forward integration and many MM_2 have a front end wholesale and sometime large retail business.
Unorganized Retailers (Mashakhors) (UR_3/UR_4)	These stakeholders are the final step before reaching end consumers. They source their produce from WS_2 or MM_2 and retail their produce at selected locations across the Delhi NCR region. These retailers typically source 10 - 50 crates a day. They further segregate their produce and accordingly price them.
Organized retailers (OR)	These stakeholders are the final step before reaching end consumers. These organizations generally purchase in bulk with constant and stable supply. They consist of hotels, hospitals, schools, etc. Normally they source their produce from the farmers or through agents at the mandi.
Food Processors (FP_3)	The typical function of the food processors is to convert tomatoes into paste, juice or peeled tomatoes. There are food processors who also provide cut vegetables to such chains. They source from the mandi or farmers directly.
Consumer (CO)	COs are consumers of tomatoes who can buy from organized or unorganized retailers. They also consume processed tomatoes in various forms such as sauces, purees or dried or desiccated forms.

4.3 Tracking the value chain

Upstream [$Mm_2 \rightarrow MM_1 \rightarrow VA_0FM_0$]

In the upstream value chain the product flows from the farmer to village and local mandi middlemen upto the Azadpur mandi. Table 4.2 shows that the farmers realize a value of Rs 12.60 per kg of tomato, against a cost incurred of Rs 3.30 per kg (cost of inputs, seeds etc). Against this, the cost of tomato per kg at the mandi is Rs 21.90 after it passes through the hands of middlemen ie. VA_0, MM_1 and MM_2.These intermediaries incur transport and storage costs. However, the bulk of the margin (77 per cent) at this phase belongs to the farmer. This high margin to the farmers could be attributed to the good tomato season when the survey was undertaken wherein farmers received a good price for the produce. The margins vary depending on the climatic conditions and crop.

Table 4.2 Margin distribution for upstream chain

Upstream : MM_2 > > Farmers

Particulars	Farmers	Village Level Aggregators	Middlemen at Mandi Level	
	FM^0	VA^0	MM^1	MM^2
Trade price	12.6	12.9	14.5	21.9
Gross margins	12.6	0.3	1.6	7.4
Costs incurred	3.3	0.0	0.5	6.1
Net margin	9.3	0.3	1.2	1.3
Net margin (%)	74.0	2.0	8.0	6.0
Margin distribution (%)	77.0	2.0	10.0	11.0

Table 4.3 Impact of Elimination of Village Aggregator [$Mm_2 \rightarrow MM_1 \rightarrow FM_0$]

Margin at MM_2	11%	13%	21%	66%
Margin at MM_1	9%	10%	14%	33%
Farmer	80%	76%	65%	1%

It is observed that the elimination of a middle man viz. the village aggregator (VA_0) from the value chain increased the margins for the farmer by 2 per cent. At Rs 10.70, farmers' profits were completely wiped out.Similarly, the removal of MM1 from the supply chain will further improve farmer's margin (Table 4.3).

Downstream [MM_2 $WS_2/UR_3 \rightarrow UR_4 \rightarrow CO$]

Table 4.4 shows the downstream price formation from the middleman at the Azadpur mandi to the retailer. From the mandi to the retailer, the price goes up by Rs 7.26 (Rs 29.16 is the landed cost to the retailer). It was observed that the price of the same product which finally goes to the consumer, varies between Rs 26 per kg to Rs 35-40 per kg. It was observed that if the consumer avoided the local retailer, he could save Rs 1 per kg. Typically, the retail trade at the mandi also finds many buyers attracted by the lower price. The consumer's price can be further reduced if other middlemen were eliminated from the chain.

Table 4.4 Margin Distribution in the Downstream Channel

Particulars	Middlemen at Mandi Level	Wholesalers	Unorganized Retailers	
	MM_2	MM_3	WS_3/UR_3	UR_4
Trade price	21.9	23.5	24.9	29.2
Gross margins	7.4	1.6	1.4	4.3
Costs incurred	6.1	0.8	0.8	1.4
Net margin	1.3	0.8	0.6	2.9
Net margin (%)	6.0	3.0	2.0	10.0
Margin distribution (%)	24	14	11	51

End-to-end Value Chain

Table 4.5 Cost and Margins incurred in End-to-End Value Chain (FM_0>>Consumers)

Particulars	Farmers	Village Level Aggregators	Middlemen at Mandi Level			Wholesalers	Unorganized Retailers
	FM_0	VA_0	MM_1	MM_2	MM_3	WS_3/UR_3	UR_4
Trade price	12.6	12.9	14.5	21.9	23.5	24.9	29.2
Gross margins	12.6	0.3	1.6	7.4	1.6	1.4	4.3
Costs incurred	3.3	0.0	0.5	6.1	0.8	0.8	1.4
Net margin	9.3	0.3	1.2	1.3	0.8	0.6	2.9
Net margin (%)	74.0	2.0	8.0	6.0	3.0	2.0	10.0
Margin distribution (%)	57.0	2.0	7.0	8.0	5.0	4.0	18.0

Total value chain cost formation

The total value chain cost is distributed amongst various actors. Break-up of the landed cost is given below:

Figure 4.1 Distribution of the Total Value Chain Cost

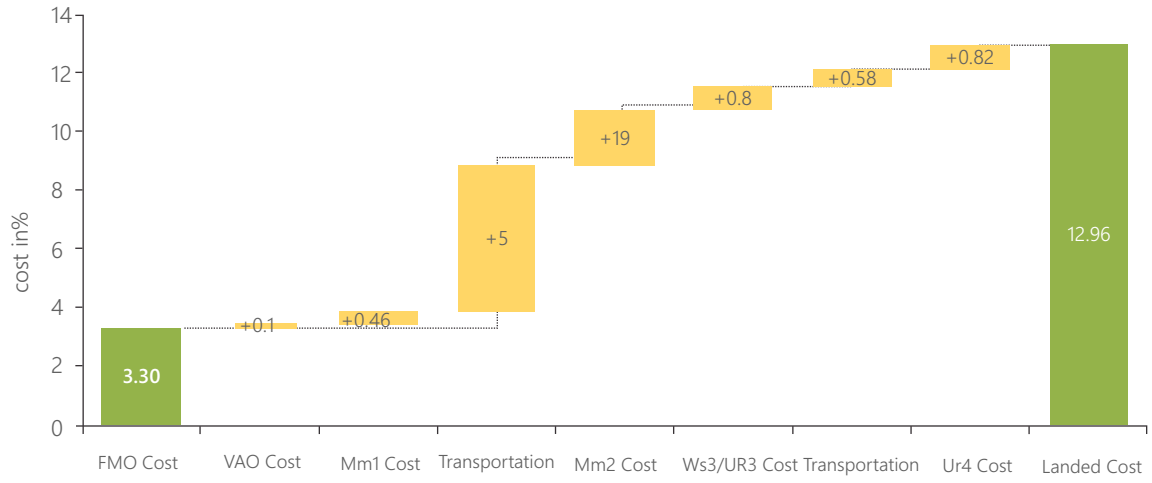
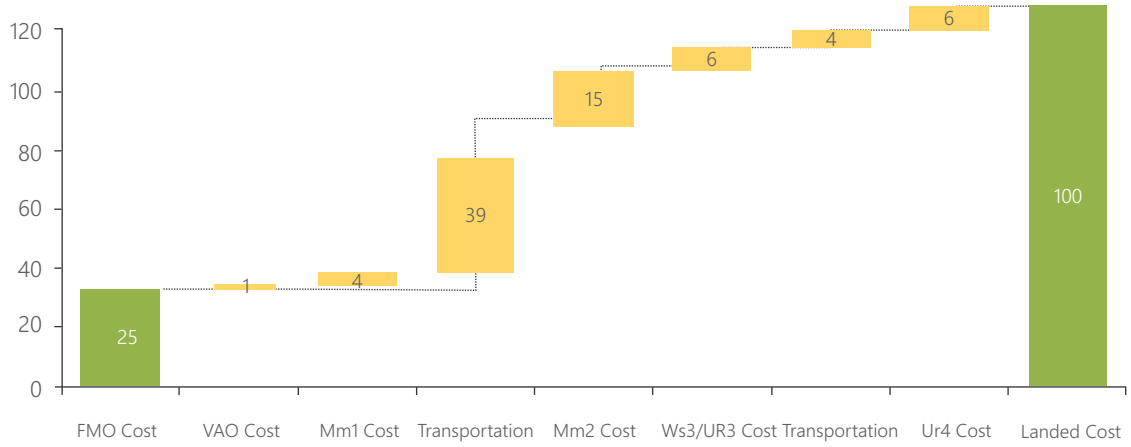


Figure 4.1 plots the total value chain costs distributed between various actors. The total cost incurred for production of 1 kg tomato in Gujarat and retailing it in Delhi NCR Region was observed to be Rs 12.96; the logistics cost of moving the produce from Gujarat to Delhi was higher than the production cost incurred by the farmers.

On the basis of the data collected, percentage distribution of cost between the actors in the chain shows that the highest cost is accounted for by transportation (39 per cent), followed by costs incurred by the farmer (25 per cent) and the commission agent or MM_2 (15 per cent) (Figure4.2)

Figure 4.2 Cost Distribution [$Fm_0 \rightarrow VA_0 \rightarrow MM_1 \rightarrow MM_2 \rightarrow WS_3/UR_3 \rightarrow UR_4 \rightarrow Co$]



4.4 Conclusion

The Tomato Price Formation case study gives interesting insights on price formation and associated costs. Due to the existence of several middle men in the value chain, price formation seems very complex. It is observed that elimination of the middlemen from the system increases the farmers' margins. The consumers' price also reduces if middlemen are eliminated from the system. However, in practice, it may not be possible to remove all middlemen/intermediaries. These functionaries often perform several roles including provision of credit, guaranteed off take of produce, movement of produce, sorting and grading etc. The resulting price formation is thus a function of the decisions made at each node in the value chain where the constituent assesses its market position vis a vis demand supply situation which then leads to the formation of prices (Table 4.6).

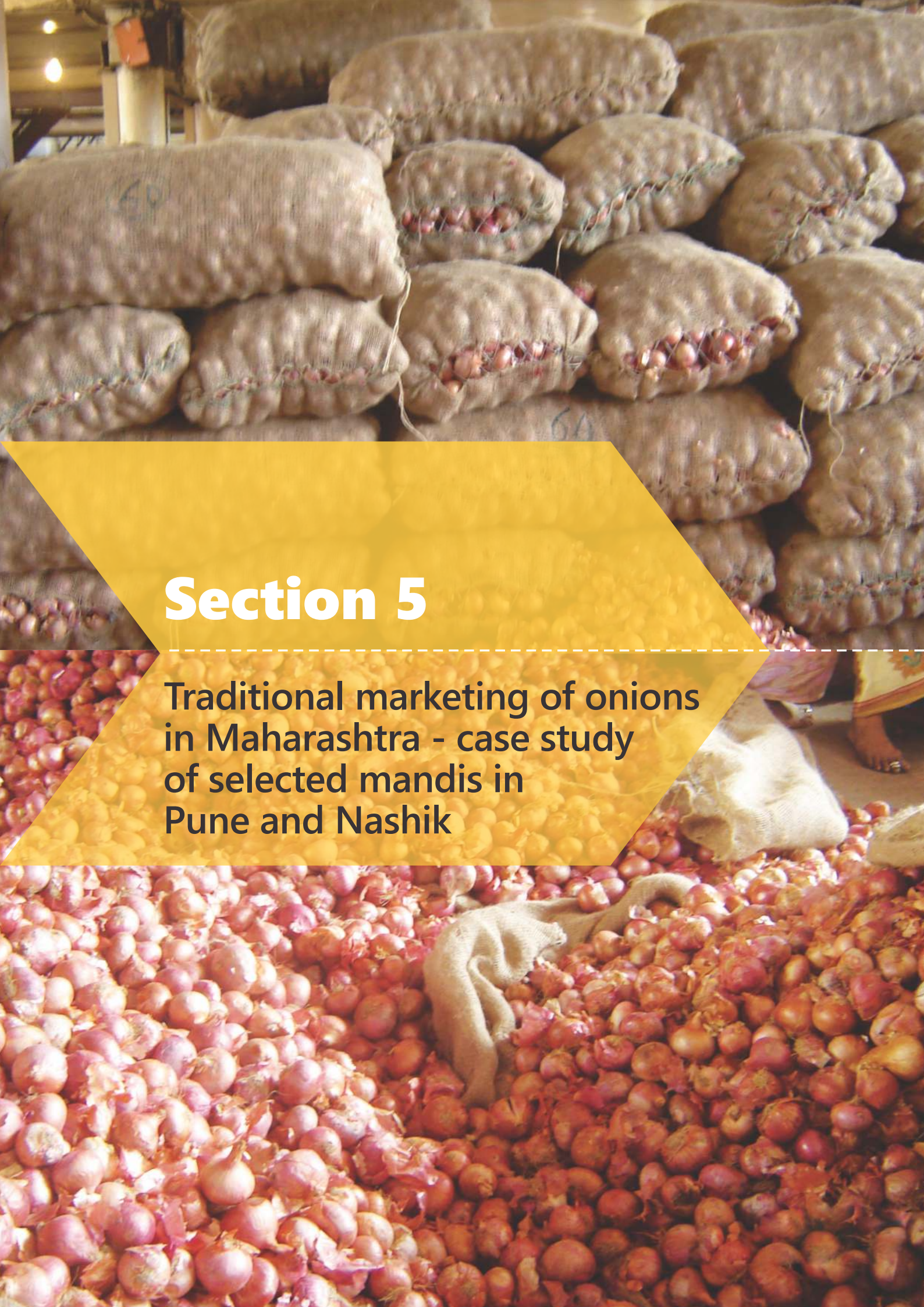
Table 4.6 Drivers that influence price formation in the value chain

Farmer	Middle Men	Retailer
Linkages & proximity to the marketing channels	Linkages with the farmers	Linkages with farmer and middle men
Quality / Perishability of the produce	Formal / informal contracts	Anticipate consumer demand
Logistics infrastructure to move products	Linkages with buyers / retailers	
Availability of farm labour and the wage market		

Costs as observed, are incurred at various levels: by the farmer who produces the crop, to the middlemen who incur costs of storage, transportation and logistics. The highest costs as observed, are due to transportation which is found to be higher than the cost of production. If the produce is directly shipped to the consumption centre without passing through the mandi channels the costs would be reduced. It is felt that such a mechanism of reducing the distance travelled by the produce needs to be created to minimize freight as well as the wastages in the value chain.

The following recommendations may help in improving the efficiency of the value chain:

1. Village level community sorting centres to be made available for sorting & grading of the produce.
2. Certification agency such as a local NGO certifying the produce at source for quantity & grade will be helpful.
3. Once certified, local and regional electronic exchange of trading to be made available for transparent price discovery and recording of commodity flow across the country. The e-NAM is a welcome step in this direction.
4. Transport directly to bulk consumers rather than passing all produce through the mandis.



Section 5

Traditional marketing of onions in Maharashtra - case study of selected mandis in Pune and Nashik

5.1 Introduction

Maharashtra is a leading producer of onion crop with Nasik, Ahmednagar and Pune being the leading districts. Onion is essentially a cool season crop and grows best under mild climate without extreme heat, cold or excessive rainfall. It grows in all types of soil. In Maharashtra, onion is cultivated in three seasons, namely kharif, late kharif and rabi. The storage quality for kharif and late kharif is poor due to high soil moisture and hence the produce cannot be stored longer than a month. However, in case of rabi crop, owing to dry days and low moisture in the soil, it is possible to store the produce for 4 to 6 months. The kharif crop is sown in May-July and available in the market from October to December while the late kharif is sown in August-September and available in the market from January to March. Rabi crop has a long shelf life and is sown in October-November and harvested in April - May. The rabi produce is sold gradually as it can be stored upto 6 months and the sale normally continues upto October, when the new crop starts arriving in the market.

Lasalgaon being a big market, the produce arrives not only from nearby villages, but also from neighbouring districts such as Ahmednagar, Dhulia, Jalgaon and Aurangabad. The produce from here is transported by railway and road to other parts of the country and exported to other countries as well. It was noted that in 2013-14, the arrival of onions to Pune APMC was 3.4 million quintals which amounts to about 6.7 million gunny bags of produce.

In order to understand marketing of onions through the traditional mandi system and assess the operational details and the level of dependence of the farmers on the mandi system and the commission agents in particular, 100 farmers growing onions and marketing through the Gulatekdi market yard in Pune and Lasalgaon market yard in Nashik district were selected randomly and interviewed. Farmers from villages - Warude, Ganegaon and Waghale in Pune and Rooie and Khadak Malegaon villages in Niphad taluka of Nashik were interviewed at their respective villages.

5.2 Key findings from Gultekadi and Lasalgaon APMC

Descriptive profile of farmers

The farmers interviewed in Pune and Nashik districts selling their produce in the Gultekadi and Lasalgaon APMC markets were 47 years and 45 years old respectively. In general, the farmers were educated primary and above in both the survey locations. About 20 per cent of the farmers interviewed were illiterate in Gultekadi, Pune compared to only 2 per cent in Lasalgaon, Pune. The education profile of farmers interviewed conform to some of the further observations related to their use of technology in gathering information, relationship with the commission agents and the like. Farmers reported an average landholding (own land) of about 7 acres in Gultekadi of which 48 per cent was under onion cultivation. Those in Lasalgaon reported an average of 8 acres of which 38 per cent was under onion cultivation (Table 5.1). Both these districts – Nashik and Pune are leading producers of onions and attract farmers from within the districts and beyond to the respective market yards.

Table 5.1: Descriptive Profile of Farmers interviewed in Pune and Nashik Districts

	GULTEKADI APMC-PUNE	LASALGAON APMC-NASHIK
Descriptive profile of the farmers interviewed		
Average age (in years)	47 (50)	45 (50)
Education - illiterate	20% (10)	2% (1)
Education - Primary	24% (12)	18% (9)
Education - Secondary	24% (12)	48% (24)
Education - Higher Secondary & above	32% (16)	32% (16)
Average land owned (in acres)	6.94 (50)	7.98 (50)
Average land under onion cultivation (in acres)	3.34 (50)	3.07 (50)

Source *CII-FACE Primary Survey 2015*

Typically, farmers who visited Gultekadi mandi to sell their produce were located at a distance 51 km away while those who visited Lasalgaon were located relatively nearby at a distance of 13.5 km.

In both the mandis, farmers were selling their produce since over two decades. While 64 per cent of the farmers themselves visited the Gultekadi mandi to sell their produce, about 44 per cent of them visited the Lasalgaon mandi. Times when the farmer (interviewed) is unable to visit the mandi, other family members sell the produce on her/his behalf. This is unlike other states like Gujarat, Maharashtra, Punjab and Delhi (studied in this context), where the produce is either brought to the mandi by a village level aggregator, or transporter. While 38 per cent farmers reported to have visited other mandis to sell their produce in Pune, majority farmers, 96 per cent reported to selling in other mandis in Lasalgaon (Table 5.2).

Neither mandis had any warehouse facilities for storing onions. Farmers interviewed in Pune did not have access to cold storage or warehouse facilities in the mandi or village

Usually, onions are not stored in cold storage or warehouses, but in onion chawls. It is the farmers cultivating rabi onions that store the produce. In the sample of 50 farmers, the onion crop was late kharif and hence disposed off within a month of harvest due to low shelf life and high moisture. The farmers harvesting the rabi crop, construct the onion chawl themselves at a cost ranging from Rs 1 lakh to Rs 2 lakh depending upon the capacity. Some farmers get subsidy to the tune of Rs 21,000 for constructing the chawls. However, during the storage period, the produce shrinks resulting in a weight loss and also the crop starts deteriorating. About 30 per cent of the crop that they store is destroyed and therefore used on the field as manure. Also, farmers reported that since the rabi onion can be stored for 6 to 7 months i.e from April to October, they stand to gain from gradual increase in price.

Table 5.2: Key features of onion marketing through traditional mandis

	GULTEKADI APMC-PUNE	LASALGAON APMC-NASHIK
Average time since when farmers come to the particular mandi	25 years	23 years
Visit mandi in person to sell	64%(32)	44%(22)
Represented by family member	36%(18)	56%(28)
Visit other mandis to sell	38%(19)	96%(48)
Cold storage/warehouse facility at the mandi level	0	0
Cold storage/warehouse facility at village level	0	54%(27) store in onion chawls

Source *CII-FACE Primary Survey 2015*

About 54 per cent farmers selling onions in the *Lasalgaon mandi* stored onions in chawls. Most of the farmers store their produce to take advantage of off season price rise. However, during the storage period, there are post-harvest losses, which comprise of moisture loss, shrinkage, decay and sprouting. In case the onion is not stored in a scientific manner, the outer skin becomes brittle and inner scales get damaged. Farmers reported storage losses of about 15.4 per cent.

Farmers' dependence on commission agents

Some insights were gathered from the farmers on their relationship with the commission agents to understand the role played by the commission agents in facilitating mandi operations and farmers' access to markets.

Farmers selling at the Gultekadi market yard reported to have been **dealing with a particular commission agent** since the past 26 years on average. About 32 per cent of the farmers always sold to a particular commission agent, while other farmers sold to more than one commission agent depending on the demand and price offered by them. All transactions are done in cash unlike other states where electronic transfer of funds and cheques are being used increasingly.

It was interesting to note that **not all farmers are satisfied with the price offered** to the farmers – while 52 per cent farmers selling in Gultekadi reported to have been satisfied, only 24 per cent of the farmers selling in Lasalgaon mandi reported to be satisfied with the price offered. Given the fact that Lasalgaon is one of the largest onion markets in India and Asia, farmers (interviewed) are not of the view that they receive the best price. Price of the produce varies by quality in both the markets (Table 5.3).

Table 5.3: Role of Commission agents in mandis

	GULTEKADI APMC-PUNE	LASALGAON APMC-NASHIK
Average time since when farmers are selling to a particular are selling to a particular commission agent	26 years	
Always selling to a particular commission agent	32% (16)	0%
Payments made in cash	100%	100%
Farmers satisfied with the price received	52% (26)	24% (12)
Farmers check mandi price on their qwn	100% (50)	84% (42)
Most popular source of price information	Commission agent followed by mobile, village aggregator and other farmers	mobile followed by commission agents, other farmer and village aggregators
Farmers feel commission agents should be removed	32% (16)	58% (29)

Source *CII-FACE Primary Survey 2015*

Penetration and uptake of technology

It was clearly observed in farmers checking upon mandi prices on their own and mobile being the most popular source in Lasalgaon, and second most popular (after commission agents) in Gultekadi market. Farmers as observed in other states are better informed about market prices and are in a position to decide where to sell and who to sell in the mandis. When asked if they think that the commission agent should be removed from mandis, 32 per cent of the farmers selling in Gultekadi said "yes" while 58 per cent of the farmers in Lasalgaon said "yes". This is indicative of the fact that farmers (interviewed) in Pune were relatively more dependent on the commission agents and were of the view that the commission agents guaranteed purchase of the produce than those in Nashik.

The commission agent serves as a link between the farmer (seller) and buyer of the produce and is also responsible for payment to farmers. Of those farmers who found the services of commission agent useful, all farmers felt that the commission agent guarantees sale of the produce while some also stated that they had no other option but to sell through commission agents. By and large the farmers received timely payments and commission agents continue to be a popular source of access to market prices. Further, in onion marketing, many sellers are located far away from the market. In such cases, they send their produce through a transport operator who unloads it at the shop of the commission agent. The commission agent takes the responsibility of receiving the produce, selling it and paying the farmer. The farmer is thus saved of the trouble of making a trip to the mandi.

In the sample, there was only one farmer selling produce through the transport operator, but a visit to Pune APMC revealed that onions were being unloaded at the shop of the commission agent from tempos by the transport operator. It was the commission agent who took the responsibility of sale on behalf of the farmer and arranged for payment. It was also observed in Pune APMC that there were buyers of onions from different states such as Andhra Pradesh, Tamil Nadu and Kerala. In this case the distant buyers fixed up their purchase deal with the commission agent over phone and send the transport operator to the mandi. The commission agent arranged for the produce to be loaded and further transported to the point of the distant buyer. In such cases, payment to the commission agent was done through electronic transfer.

Interface with private players coming to the mandi

With the amendment of APMC act, the farmers have the option of selling directly to the private players and/or through private markets. For farmers selling in Gultekadi mandi, 48 per cent of them found private players buying onions directly from farmers while 52 per cent had not witnessed such players. However, none of the farmers in the sample themselves sold to private players. Some farmers who had come to sell their produce in the mandi in Pune were randomly selected and interviewed. They mentioned that since their farms were in the interiors, the presence of private players was not prominent. In some villages, the status of roads was poor and not easily accessible. In such cases, direct marketing of the produce was difficult and farmers preferred to go to the mandi. These farmers had access to small markets closer to their farms, but preferred the Pune mandi as they received much higher prices.

About 34 per cent of farmers (interviewed) selling in Lasalgaon mandi had seen private players come to buy onions directly while 64 per cent did not feel the presence of private players. Although 34 per cent of farmers were aware of private players they did not sell their produce to them.

Access to credit from sources other than commission agents

Farmers selling their produce to Lasalgaon APMC were members of Cooperative Credit Society and borrowed mainly from the society. They were not in the practice of taking loans from commission agents. The loan was normally taken for 12 months at a rate of interest of 6 per cent per annum. On an average, the loan amount of the sample farmers was Rs 47,250 per annum.

banks and only 4 respondents availed of this loan and paid interest at the rate of 12 per cent per annum. In case of medium term loans from cooperative banks, the interest rate was 12 per cent per annum and only 2 farmers availed this loan. About 24 per cent of the farmers also borrowed from Self Help Groups (SHGs) at the rate of 24 per cent per annum. Out of 12 farmers who borrowed from SHGs, it was noted that for 8 farmers it was the only source of credit. In case the farmer defaults on a loan, he is not entitled for a loan in future (Table 5.4).

Interaction of the farmers with market committee

One of the features of a regulated market is to settle grievances of the market functionaries. There are cases when farmers have to resort to the market committee to resolve their grievances, if

Table 5.4: Sources of credit availed by Onion Farmers in Pune selling to Gultekadi mandi

	Loan Amount (INR)	Interest Rate (% p.a.)	Duration (Years)
Bank	34,600	12	6.75
Cooperative Medium term	11,000	12	5
Cooperative Crop Loan (PACS)	30,832	Interest free if repaid within a year	1
Self Help Groups	12,300	24	1

Source: *CII-FACE Primary Survey 2015*

Similarly, farmers selling in Gultekadi mandi did not take loan from commission agents, they availed loans from other sources. Also, 22 per cent of farmers interviewed did not take loan from any source. The main source of loan was from Primary Agricultural Cooperative Societies (PACS) and 54 per cent farmers took loan from this source. The average loan taken from this source was Rs 30,832. In case the loan amount is less than Rs 1 lakh and the loan is repaid within a year, then the loan is interest free. Long term loans were availed from nationalized

any. Accordingly, such questions were posed to the sample farmers, to observe if the regulated markets were protecting the interests of farmers. It was observed that 60 per cent farmers had interaction with the market committee, while 40 per cent did not have any interaction. Out of 30 farmers who interacted with the market committees, 29 of them stated that their grievances were heard by the committee. About 34 per cent farmers selling in Lasalgaon market had interaction with the market committee while there was no interaction with respect to 66 per cent.

Net returns to farmers

Onion is a highly perishable crop and is subject to both inter seasonal as well as intra seasonal price fluctuations. Intra seasonal price arises because of rise in price in the lean period when the supply begins to reduce. There are also inter seasonal fluctuations in prices because the production varies from year to year depending upon the area under the crop, weather, etc. Finally, government policies such as fixation of MEP, export ban, import of onions, bringing onion under Essential Commodity Act, etc. also impact the price of onion. Since onion is an important ingredient in the staple food of Indian households, and also consumed largely by poor households, it is a politically sensitive crop. Due to fluctuations in price and production and also increase in cost of production, the net returns to the onion grower varies from year to year.

Farmers who cultivate onion, besides incurring cost of production, also have to incur marketing costs in terms of transport and marketing charges, in case of sales to APMC. Therefore, from the sample farmers, an attempt was made to observe the cost of production, marketing costs and net returns.

It can be observed that the cost of production is Rs 7.30 per kg, while marketing costs incurred by farmer is Rs 1.65 per kg. The sale price is Rs 13.88 per kg and hence marketing costs to the farmer is about 11.89 per cent of sale price (Table 5.5). The net returns after deducting cost of production and marketing costs is Rs 4.93 per kg. In our sample, it was observed that on an average the farmer produces 115.95 quintals per acre and the weighted average price across all seasons and taking quality into consideration was Rs 1,388 per quintal. Since net returns of the farmer are Rs 493 per quintal, his net income per acre is Rs 57,153.50. The average area under onion in our sample was 3.07 acres which therefore translates to a net income of Rs 1,75,460 from cultivation of onions.

Table 5.5: Cost of Production, Marketing Costs and Net Returns (Rs Per Kg)

PARTICULAR	Rs./kg
Cost of production	7.30
Transportation	0.48
Labor charges (sorting grading on farm +loading)	0.37
Labor charges (unloading at the mandi)	0.03
Weighing	0.03
Commission fee	0.66
Market fee (paid by purchaser)	0.01
Interest on loan	0.08
Marketing cost	1.65
Sale price Per kg	13.88
Cost of cultivation + Marketing costs	8.95
Net Profit per kg	4.93

Source *CII-FACE Primary Survey 2015*

Overall, the data from field survey and visit to Lasalgaon APMC reveals that the APMC had by and large all features of a regulated market. Efforts were made to provide maximum facilities to farmers. Onion being a very perishable crop, often shows huge fluctuations in prices between peak period and lean period. Efforts are made by the government to increase storage structures of onions, by giving subsidies, so as to even out the supplies and thus suppress unduly high prices during lean season. Policy intervention is also resorted, in order to maintain the prices of onions.

It is observed that an onion grower earns net returns of Rs 7.30 per kg. The yield per acre of the sample farmers was observed to be 10,261 kg which translates to a net income of Rs 74,905 per acre (Table 5.6). Any fall in price of onion will reduce the net returns accruing to the grower. Further, if weather conditions are not favourable, the quality and quantity of produce is likely to be adversely affected. This fall in quantity may be compensated by rise in price because onion is a sensitive commodity. The government may intervene and impose export ban, import huge quantities from neighbouring countries and resort to other measures to suppress price rise. Thus, onion farmers constantly face fluctuations in net returns.

Table 5.6: Cost of Production, Marketing Costs and Net Returns (Rs Per Kg)

PARTICULAR	AVERAGE COST/NET RETURNS
Cost of production	5.54
Transportation	0.71
Labor charges(sorting grading on farm +loading)	0.28
Labor charges (unloading at the mandi)	0.05
Packaging	0.40
Bharai	0.02
Weighing	0.03
Commission	0.83
Interest on loan	0.02
Total	7.88
Price Received	15.18
Net returns	7.30

Source *CII-FACE Primary Survey 2015*

5.3 Conclusion

In the traditional marketing chain for onions studied here, it is observed that farmers' price realization is determined by the prevailing demand and supply conditions, net production, and marketing costs. They typically sell the produce through traditional marketing channels through commission agents against a commission fees. It is observed, unlike markets in other states, farmers' dependence on commission agents is somewhat limited and they do not depend on them for price information, and more importantly credit. All the farmers interviewed for this study did not report having ever availed loans from the commission agents and had access to other sources such as PACS, SHGs and banks for credit, often at exorbitant rates. Farmers also felt to a certain extent that commission agents should be done away with. They were also not all satisfied with the price offered to them. Many reported selling to different commission agents depending upon the prevailing demand and price offered to them. While some farmers had an interface with the private players for direct purchase of onions, none of them interviewed had ever sold to these players.

Onion prices have been quite volatile reaching peaks during a certain period of the year. Given significant price fluctuations driven by uncertain crop harvest and limited shelf life of onions, it is imperative to address demand – supply gaps by appropriate crop forecasting measures, improving storage capacity and technology to meet peak demand situation. Farmers would benefit from adequate storage options which would enable them to sell onions when demand is high and hence earn higher returns.

Section 6

Mandi infrastructure across selected states

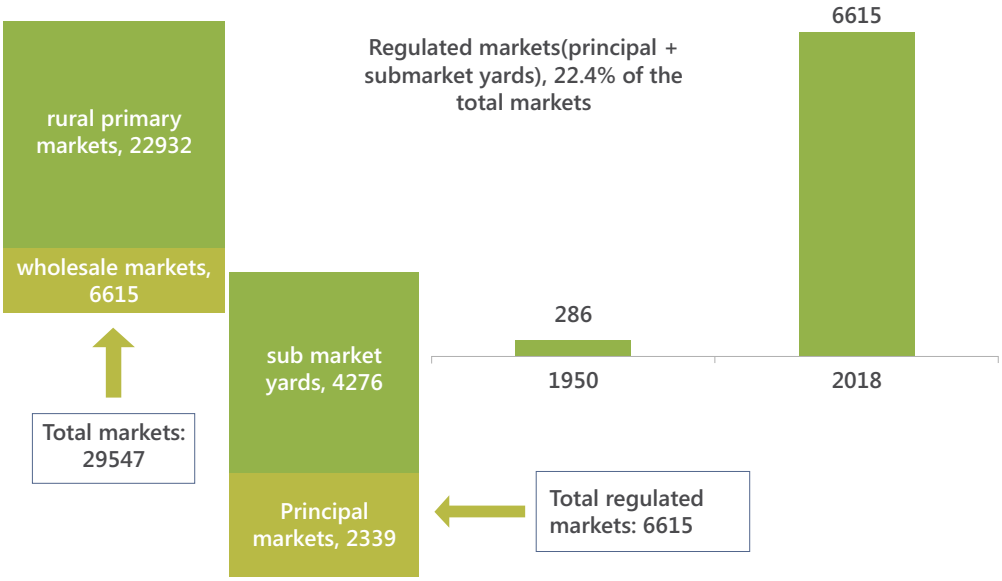
6.1 Introduction

The agriculture marketing network in India comprises of regulated and unregulated markets. Regulated markets in India which account for 22.4 per cent of the total markets (29,547) have increased from 286 in 1960 to 6615 in 2018. Further regulated markets are categorized into principal yards (2339) and sub-yards (4276) respectively (Illustration 4.1). These markets vary to a large extent in terms of the infrastructure available as also the turnover based on arrivals of commodities.

A sizeable proportion of the market revenue earned in the form of market fee is earmarked for market development and infrastructure creation ranging from internal roads, auction platforms, grading and sorting facilities and other facilities such as guesthouse, canteens, etc for farmers and traders coming to markets. It has been observed in certain cases that infrastructural facilities although present were not functional or inadequate to support the flow of commodities into the market.

A status check of infrastructure was

Figure 6.1: Current Status of Agriculture Marketing Network



Source: *Ministry of Agriculture and Farmers' Welfare*

Market infrastructure plays an important role in ensuring smooth marketing operations thereby containing supply chain wastage, and greater scope for value addition translating into better price realization for the farmers and fair price to the consumers. While all APMC markets are equipped with basic infrastructure that allow trading of agriculture commodities, the level and quality of infrastructure varies across markets and states.

conducted in selected mandis across Gujarat, Maharashtra, Punjab and Delhi and it was observed that most of the markets were equipped with adequate infrastructure facilities. Gujarat has been working towards bringing in innovative infrastructure facilities promoting better utilization of resources (rain water harvesting unit) and waste management (biogas generation, bio-fertilizers) in addition to APMC mall and auditorium for training and capacity building activities.

Table 6.1: Infrastructure assessment conducted in selected mandis across 4 states

States	APMC markets
Delhi	Azadpur APMC market
Punjab	Amritsar New Grain Market Mandi, Faridkot Grain, Fruit and Vegetable Mandi, Fatehpur Cantt Grain Mandi, Zira New Grain Market Mandi, Gurdaspur New Grain Market Mandi, Jalandhar City New Grain Market Mandi, Narol Jaimal Singh Grain Market Mandi
Gujarat	Ahmedabad APMC, Rajkot APMC, Surat APMC and Vadodara APMC
Maharashtra	Vashi APMC market; Gultekadi APMC- Pune; Lasalgaon APMC - Nashik

Source *CII-FACE Primary Survey 2015*

6.2 Maharashtra – Gultekadi - Pune, Lasalgaon - Nashik and Vashi - Mumbai

A visit to Gultekadi APMC, Pune, revealed that it was spread over 190 acres of land. The space (galas) was leased out to the commission agents for 99 years. By and large, most infrastructure facilities were in place. Tarred roads, 24 hours water supply, security, and cleanliness, were taken care of by the Market Committee. Rest houses were available for farmers for overnight stay in case they could not sell their produce on the day of arrival. They were charged Rs 5 per day for proper bedding and toilet facilities which also included hot water for bath. There was also a petrol pump which was open for 24 hours. The weigh bridges had a capacity of 20 to 50 tonnes which was available for 24 hours. Specific facilities such as information notice board, price display board were under repair and hence not functional. Auction platform was available for lime only. There was no warehouse facility available for onions in the market yard.

The Lasalgaon APMC is a regulated market and was established in 1947. The market has two sub yards, namely Niphad and Vinchur. The APMC is spread over an area of 16.51 hectares and the Lasalgaon railway station is just 1 km away while the nearest highway is at a distance of 22kms.

Table 6.2: Infrastructure facilities at Gultekadi and Lasalgaon APMC markets

Particulars	Gultekadi - Pune	Lasalgaon - Nashik
Information Notice Board/Electric Display Board	Yes	Yes
Display of price on the Notice Board	-	Yes
Auction platform for selling goods	No	Yes
Shed for storage	Yes	Yes
Weighing facilities	Yes	Yes
Canteen	Yes	Yes
Toilets	Yes	Yes
Internal Roads	Yes	Yes

Particulars	Gultekadi - Pune	Lasalgaon - Nashik
Parking	Yes	Yes
Fencing	Yes	Yes
Post Office	Yes	Yes
Bank	Yes	Yes
Input/Sundry Shops	Yes	Yes
Fire Extinguishers	No	No
Rest house for farmers	Yes	Yes
Drinking Water	Yes	Yes
Electricity	Yes	Yes
Garbage Disposal System	Yes	Yes
Sweeping Facilities	Yes	Yes
Warehouse facilities within the mandi premises	Yes	Yes

Source *CII-FACE Primary Survey 2015*

Infrastructure assessment in Vashi APMC revealed that most of the basic and important facilities were available and functional. Rent House/Guest House for farmers was not in used since 7 to 8 years due to facilities is not in proper condition. Renovation is essential. Warehouse facility is well maintained. APMC has allotted warehouse to third party for management through tendering process. The third party pays around Rs 2.25 lakh per month for each warehouse to APMC in four different sections. Cold storage facilities are made available by private players. While the APMC is interested in upgrading the market infrastructure by creating such facilities, traders are reluctant to invest their money to establish cold storage and are seeking Government funding. Traffic of vehicles is very heavy in APMC premises. Trucks and containers (with 12 to 22 tyres) move within the premises but movement becomes difficult during peak time.

Table 6.3: Infrastructure assessment of Vashi APMC

APMC markets	States
Administrative Office	Yes
Auction Platform	Yes
Bank	Yes
Black Board	Yes
Canteen	Yes
CCTV Camera	Yes
Cold Storage	Yes
Computerized Weighing Bridge	Yes
Computers	Yes
Display of Prices on the Notice Board	Yes
Drainage System	Yes
Drinking Water facility	Yes

APMC markets	States
Electricity	Yes
Export Facility	Yes
Farmers Guest House	Yes
Fire Extinguishers	Yes
Garbage Disposal System	Yes
Grading Machine System	Yes
Hall	Yes
Hospital	Yes
Information Notice Board/Electric Display Board	Yes
Internal Road	Yes
Input/Sundry Shop	Yes
Irradiation Center	Yes
Packaging facility	Yes
Parking Area	Yes
Plantation	Yes
Police Station	Yes
Post Office	Yes
Ripening Chamber	Yes
Shed for storage	Yes
Shops cum Godown	Yes
Sundry Shops	Yes
STD Booth	Yes
Sweeping Facility	Yes
TV	Yes
Toilets	Yes
Vapour Heat Treatment	Yes
Wall Compound	Yes
Wire Fencing	Yes
Water Cooler	Yes
Ware House facilities within the Mandi premises	Yes
Water Tank	Yes
Water Pump	Yes
Weighing machines	Yes

Source: *CII-FACE Primary Survey 2015*

6.3 Gujarat – Surat, Vadodara, Rajkot and Ahmedabad

The mandis visited in Gujarat for the infrastructure assessment had innovative facilities and service units in addition to the standard infrastructure facilities and services available in the APMC markets. Infrastructure for waste management, conservation of resources and additional infrastructure for training and capacity building were available in certain mandis. Gujarat is also one of the states taking initiative on electronically connecting different APMCs and hence creating e-platforms.

In Surat, it was observed that the guesthouse for farmers was not in used since 9 years due to easy transportation facility. Warehouse facility was not available because Surat APMC especially deals with perishable fruits and vegetables. A new pack house facility is set to come up in late November. The APMC has set up soil testing laboratory in which macro and micro- elements of soil testing facilities are available. While the government pays Rs 65 per sample, remaining amount of Rs 70 to Rs 90 is borne by the APMC. No fee is charged to the farmers.

In Vadodara, APMC provide canteen voucher of Rs 10 to the farmers which helps the distant farmers to get food in APMC premises within less amount.

Table 6.4: Infrastructure assessment of selected mandis in Gujarat

Particulars	Ahmedabad	Rajkot	Surat	Vadodara
Administrative Office	Yes	Yes	Yes	Yes
APMC Mall	No	No	YES	No
Auction Platform	Yes	Yes	Yes	Yes
Bank	Yes	Yes	Yes	Yes
Black Board	Yes	Yes	Yes	Yes
Biogas	No	No	In Process	YES
Broker Office Complex	No	Yes	No	No
Canteen	Yes	Yes	Yes	Yes
CCTV Camera	No	No	Yes	Yes
Cold Storage	No	Yes	Yes	Yes
Computerized Weighing Bridge	Yes	Yes	No	Yes
Computers	Yes	Yes	Yes	Yes
Display of Prices on the Notice Board	Yes	Yes	Yes	Yes
Drainage System	Yes	Yes	Yes	Yes
Drinking Water facility	Yes	Yes	Yes	Yes
Electricity	Yes	Yes	Yes	Yes
Electronic Auction Hall	No	No	Yes	No
Export Facility	No	Yes	No	No
Farmers Guest House	Yes	Yes	Yes	Yes
Fire Extinguishers	Yes	Yes	Yes	Yes

Particulars	Ahmedabad	Rajkot	Surat	Vadodara
Garbage Disposal System	Yes	Yes	Yes	Yes
Grading Machine System	No	Yes	Yes	No
Hall	Yes	Yes	Yes	Yes
Information Notice Board/ Electric Display Board	Yes	Yes	No	No
Internal Road	Yes	Yes	Yes	Yes
Input/Sundry Shop	Yes	Yes	Yes	Yes
Mineral RO Plant	No	Yes	No	Yes
Organic Waste Converter Unit	No	No	No	Yes
Packaging facility	Yes	Yes	Yes	No
Parking Area	Yes	Yes	Yes	Yes
Plantation	No	Yes	No	No
Police Station	No	Yes	No	No
Post Office	No	Yes	No	No
Ripening Chamber	No	No	Yes	Yes
Roof Rain Water Harvesting Structure	No	Yes	No	Yes
Vegetable Van (Vegetable Initiative directly farmer to consumer)	No	No	Yes	No
Sewage water purification system (Electrolysis method)	No	No	No	Yes
Shed for storage	Yes	Yes	Yes	Yes
Shops cum Godown	No	Yes	No	No
Sundry Shops	No	Yes	Yes	Yes
Solar System	No	Yes	No	Yes
Soil Testing Facility/Lab	No	No	No	Yes
Sweeping Facility	Yes	Yes	Yes	Yes
TV	Yes	Yes	Yes	Yes
Toilets	Yes	Yes	Yes	Yes
Vapour Heat Treatment	No	No	No	No
Wall Compound	Yes	No	Yes	Yes
Wire Fencing	No	No	No	No
Water Cooler	Yes	Yes	Yes	Yes
Ware House facilities within the Mandi premises	Yes	Yes	No	No
Water Tank	Yes	Yes	Yes	Yes

Particulars	Ahmedabad	Rajkot	Surat	Vadodara
Water Pump	Yes	Yes	Yes	Yes
Weighing machines	Yes	Yes	Yes	Yes

Source *CII-FACE Primary Survey 2015*

6.4 Punjab

During survey, it was observed that essential infrastructure like auction platform, shed, weighing machine, display board are available in the *mandis*. Most of the display boards are functional only during peak marketing seasons and where the display board facility is not available in the mandi, they display prices on a banner or board. Farmer's guest houses were not used all over the mandis since many principal yards and collection centers are present in each district. It was observed that APMC allowed Govt. Agencies to manage their warehouse in APMC campus. APMC flow tender for temporary canteen arrangement during peak market season. Due to paddy and wheat growers being more in Punjab, the markets are active only for 1 to 2 months during Kharif and Rabi.

Table 6.5: Infrastructure assessment of selected mandis in Punjab

Particulars	Amritsar	Faridkot	Firozpur (Cant)	Firozpur (Zira)	Gurdaspur	Jalandhar City	Narol Jaimal Singh, Pathankot
Administrative Office	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Auction Platform	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank	Yes	Yes	No	No	No	Yes	No
Black Board	Yes	No	No	No	Yes	Yes	No
Canteen	Yes	No	No	No	Yes	Yes	No
Computerized Weighing Bridge	Yes	Yes	No	Yes	No	Yes	No
Computers	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Drainage System	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Drinking Water facility	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Electricity	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Farmers Guest House	No	Yes	Yes	Yes	Yes	No	No
Garbage Disposal System	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Particulars	Amritsar	Faridkot	Firozpur (Cant)	Firozpur (Zira)	Gurdaspur	Jalandhar City	Narol Jaimal Singh, Pathankot
Hall	Yes	Yes	No	No	No	No	No
Information Notice Board/Electric Display Board	Yes	Yes	Yes	Yes	Yes	Yes	No
Internal Road	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Input/Sundry Shop	Yes	Yes	No	Yes	Yes	Yes	No
Parking Area	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ripening Chamber	Yes	Yes	No	No	No	Yes	No
Shed for storage	Yes	Yes	Yes	Yes	Yes	Yes	No
Shops cum Godown	Yes	Yes	No	Yes	Yes	Yes	No
Sweeping Facility	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Toilets	Yes	Yes	Yes	Yes	Yes	Yes	No
Wall Compound	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Water Cooler	Yes	Yes	Yes	No	Yes	Yes	No
*Ware House facilities within the Mandi premises	Yes	No	No	Yes	Yes	Yes	No
Water Tank	Yes	Yes	No	No	No	Yes	No
Water Pump	Yes	Yes	No	Yes	No	Yes	No
Weighing machines	Yes	Yes	No	Yes	Yes	Yes	Yes

** Warehouses belongs to Govt. Agency Source: CII-FACE Primary Survey 2015*

6.5 Delhi - Azadpur

Azadpur APMC being a large market for fruits and vegetables was observed to have infrastructure facilities and services. However, it was observed during the interaction with the users (ie. commission agents and traders) that the condition of roads, garbage disposal, etc. was not quite satisfactory. Also, heavy traffic into the market was not manageable during peak business hours.

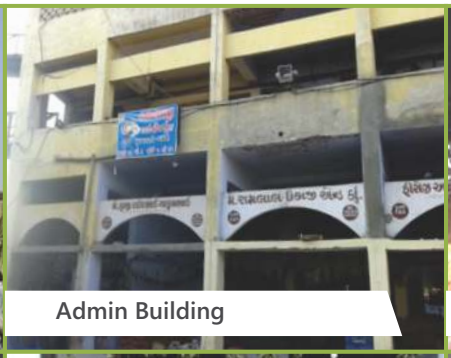
Table 6.6: Infrastructure assessment of selected mandis in Delhi

Particulars	Azadpur APMC - Delhi
Auction platform for selling goods	Yes
Shed for storage	Yes
Weighing facilities	Yes
Canteen	Yes
Toilets	Yes
Internal Roads	Yes
Parking	Yes
Fencing	Yes
Post Office	Yes
Bank	Yes
Input/Sundry Shops	Yes
Rest house for farmers	Yes
Drinking Water	Yes
Electricity	Yes
Garbage Disposal System	Yes
Sweeping Facilities	Yes
Warehouse facilities within the mandi premises	Yes

Source *CII-FACE Primary Survey 2015*

Ahmedabad APMC - Gujarat

Main Gate


Admin Building


Shed


Auction platform


Godown


Traders Shops


Weighing Machine


Temporary Storage system

Internal Road


Parking Area


Electricity connection


Farmer & Driver Guest House

Comm. Agents Co-ope. & Credit Society Office

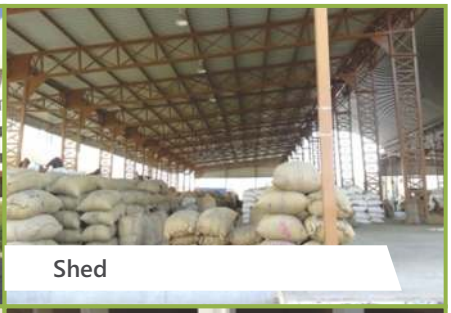
Bank

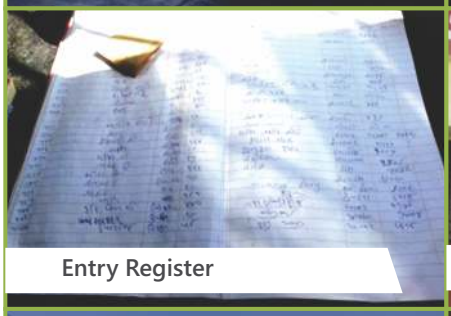
Janseva Kendra, Collector Office Branch

Rajkot APMC - Gujarat

Main Gate


Admin. Building


Shed


Entry Register

Agri.- Input Agency


Weighing and Packaging


Cotton Market


Garlic Market


Leafy Vegetable Market

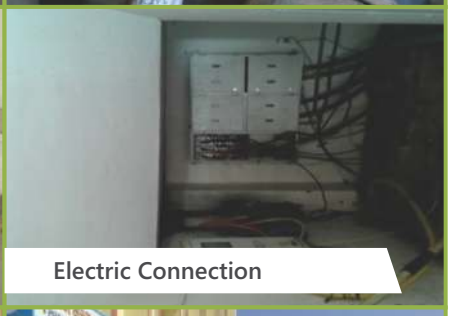

Shops


Godown


Cleaning & Packaging Machine


Grading Machine


Fire Extinguisher


Electric Connection

Farmer Guest House & Canteen


Meeting & Training hall


Merchant & Comm. Agent Asso. Office

Hotels & Other shops

Internal Road

Parking Area

Office Cabin in Shop

Onion temporary Storage

Bank Building

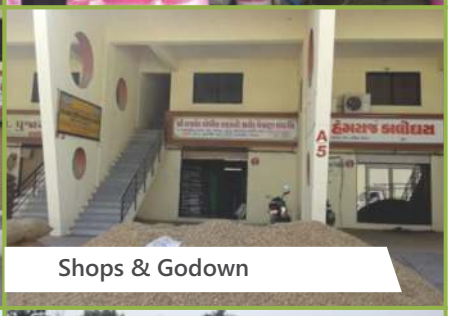
Post Office

Roof Rain Water Harvesting Structure

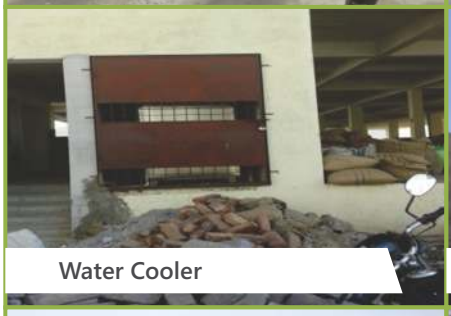
R.O Plant

Weighing Bridge

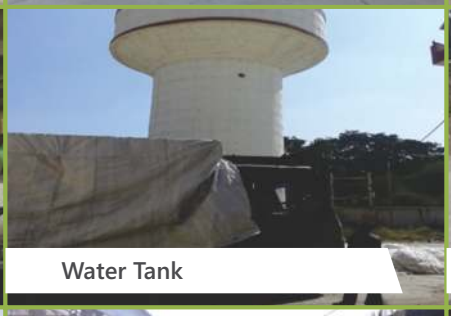
Grocery Shop



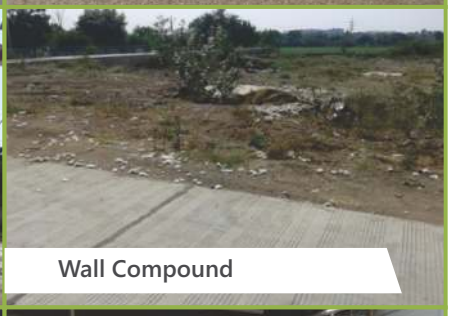
Shops & Godown



Water Cooler



Water Tank



Wall Compound

Organic Soil from Wastage

Saplings for plantation

Water Cans

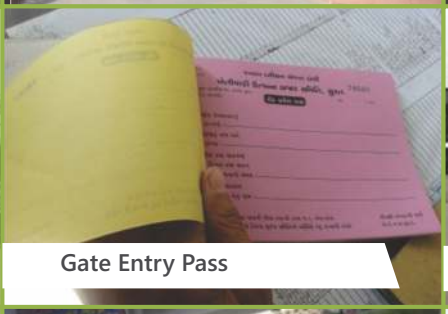
Surat APMC - Gujarat


Main Gate of APMC


Administrative Building


Administrative office


Weighing Bridge


Gate Entry Pass


Parking Area


Auction Platform


Agri.-Input Shop


Shop cum Godown


Price Display Board


Auditorium and Auction Hall


Auction Process


Pumpkin Storage and Electric Connection

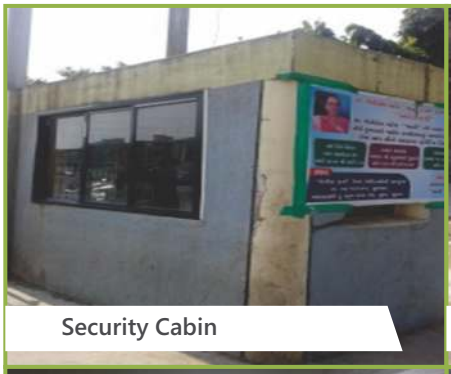

Garlic Market Auction


Potato store temporary at Platform


Canteen

Cold Storage


Wholesaler Cabin at Auction Platform



Security Cabin

Drinking Water Facility

Refreshment Stall

Farmer Guest House

Fire Extinguishers

Roof Rain Water Harvesting Structure

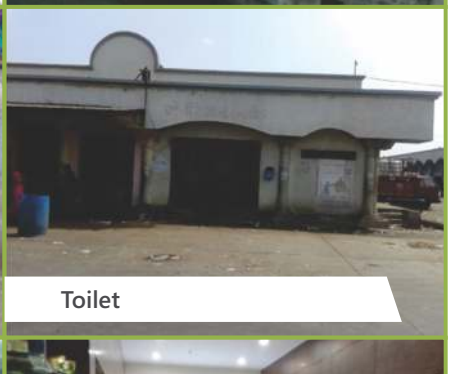
Internal Road

Mobile Repairing Shop & Electric Connection

Temporary Storage System

Wall Painting to create awareness

Water lane system



Toilet

APMC Mall Office

Training Hall

APMC Mall Grocery Section

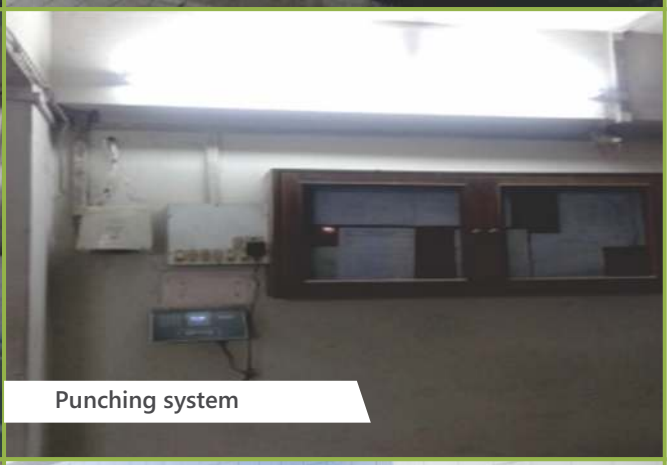
APMC Mall Fruits & Vegetable section

APMC Mall Amul Shop

APMC Mall Canteen

Manual Grading

Admin. Guest House



Punching system

Home Delivery Vegetable Van

Krushi Bazar

Vadodara APMC - Gujarat

Administrative Building


Auction Platform


Weighing Machine


Builty Bill


Price Fixing System
under Handkerchief


Godown


Internal Road Agri. Input Shop


Parking Area


Shops


Cooperative Purchase and
Sale Union


Shops cum Godown


Security Cabin


R.O Drinking Water System


Vehicle Entry Fees
Collection Center


Canteen


Canteen Voucher


Cloth Shop


Garbage Disposal System

CCTV Camera

Fire Extinguishers

Electric Connection

Bio-Gas

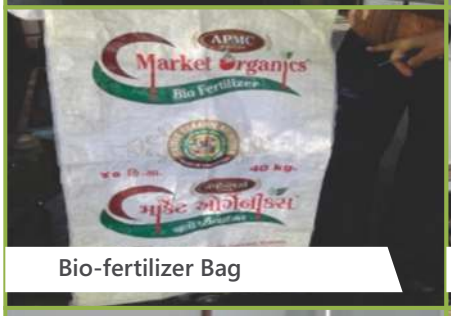
Bio-Gas Baloon

Sewage Water Purification System

Organic Waste Converter Machine

APMC Organic Fertilizer Bag

Bio-fertilizer Manufacturing Unit

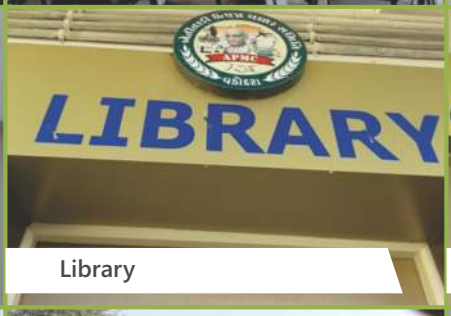


Bio-fertilizer Bag

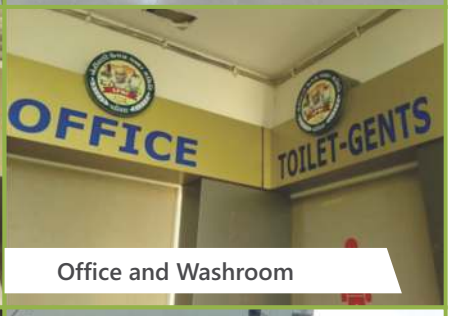
Training Hall

Training and Meeting Hall

Admin. Guest House



Library



Office and Washroom

Farmers & Driver Guest House

Wall Compound

Entry Fee Collection Cabin

Mumbai, Vashi - Maharashtra


Entry Gate


Admin Building


Computerized Weighing Bridge


Auction Hall


Black Board


Electric Display Board


Internal Roads


Parking Area

Agri.-Input Shop


Staff Welfare Asso. Office

APMC Canteen


Cooperative Bank Branches

Courier Service


Fruit Market Office


Drinking Water Facility


Drivers Rest House

Farmer Rest House


Packaging House

Police Station

Post office

Hotel and Other offices

Syndicate Bank

Temporary Storage

Toilets

Shops in Fruit Market

Cold Storage

Export House

Grading machine

Mango Cleanser

Vapor Heat Treatment System

Water Treatment Chamber

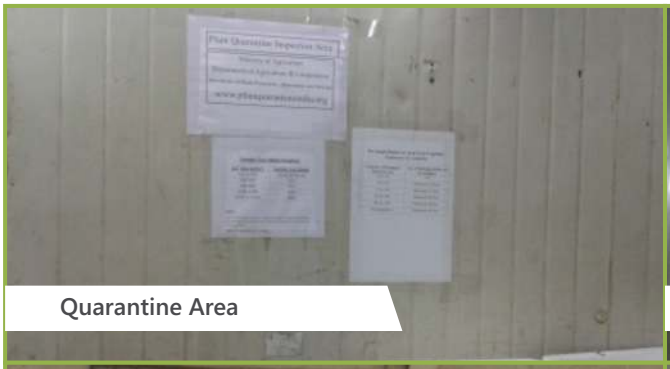
Mango Storage System

Grading Machine

Packaging House

Manual Grading

Mango storage system in cold storage



Quarantine Area

Quality Control System

Warehouse

Water Cooler

Electricity Connection

Xerox, Typing Center

Cleaning System

Garbage Disposal System

Wall Compound

Food and Water Center

Amritsar APMC (Grains) - Punjab

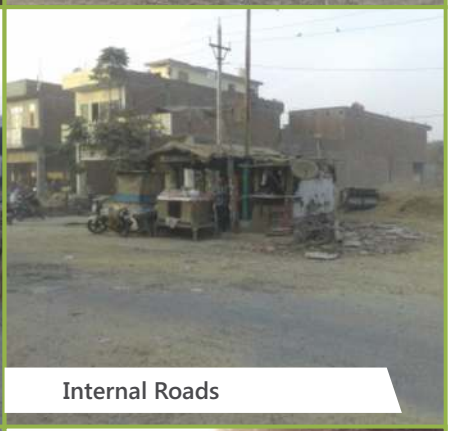

Weighing Bridge


Display Board


Sheds

Shops with Godown

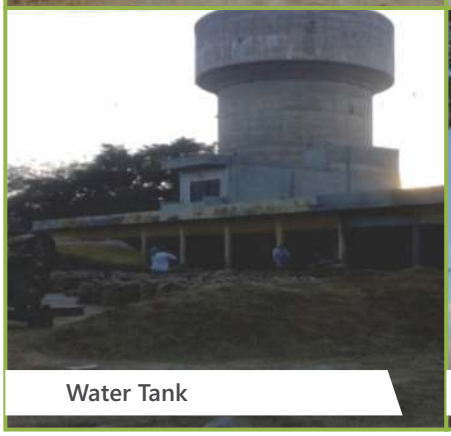

Winnowing & Cleaning

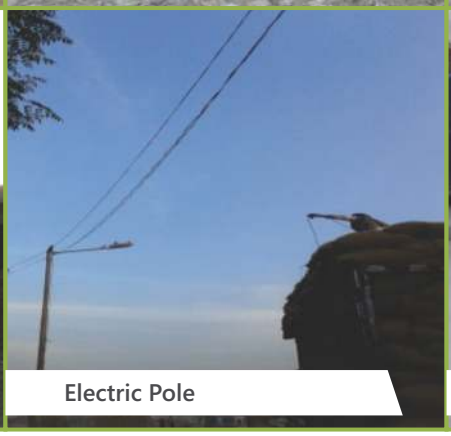

Internal Roads

Allahabad Bank

Grocery Shop


Tea Stall


Water Tank


Electric Pole


Toilet

Faridkot APMC - Punjab


Admin. Building


Computerized Weighing Bridge


Shed


Auction Platform


Cleaning & Packaging

Traders Office

Agri.- Input Shop


Internal Road


Parking Area

Bank & ATM


Electric Poles


Tea Stall

Vegetable/Fruit Market Shed

Storage of Vegetable/Fruits in shed

Manual Grading & Packaging

Commission Agent Office

Ripening Plant

Cleaning and Grading of Banana

Toilet

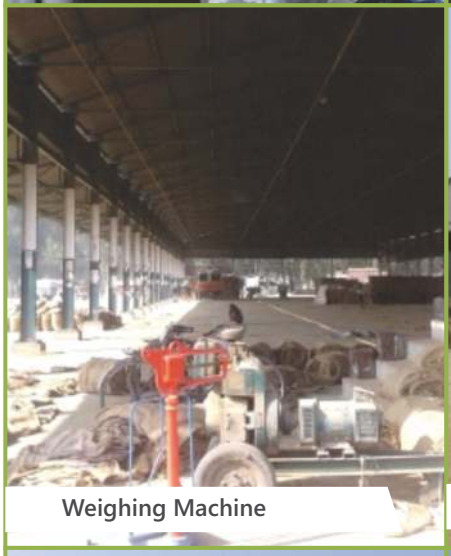
Drinking Water Facility

Ferozpur Cantonment APMC - Punjab

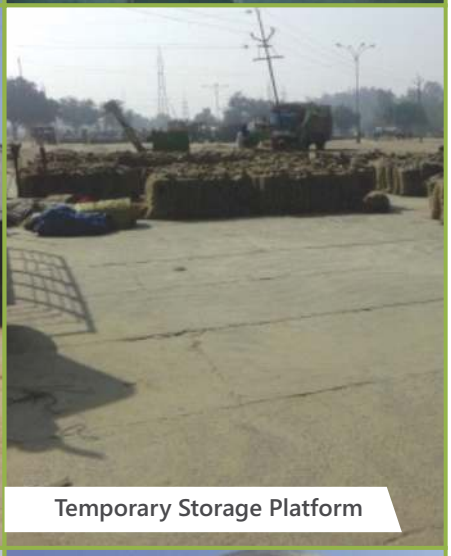

Admin Building

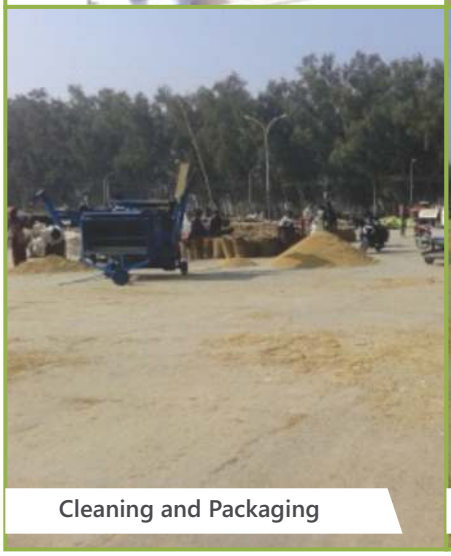

Notice Board


Display Board


Weighing Machine


Shed


Temporary Storage Platform


Cleaning and Packaging


Electric Poles


Water tank

Zira, Ferozpur APMC - Punjab

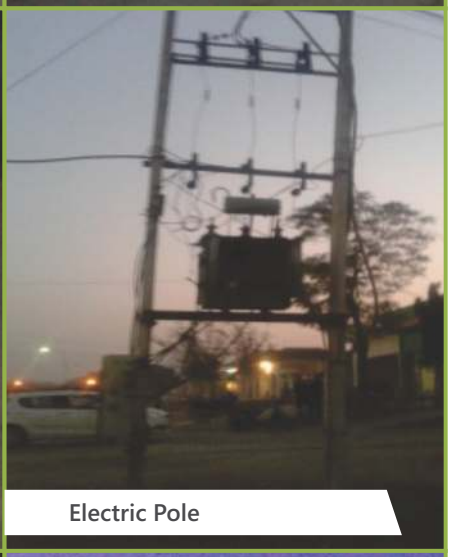

Weighing Bridge


Shed


Shops

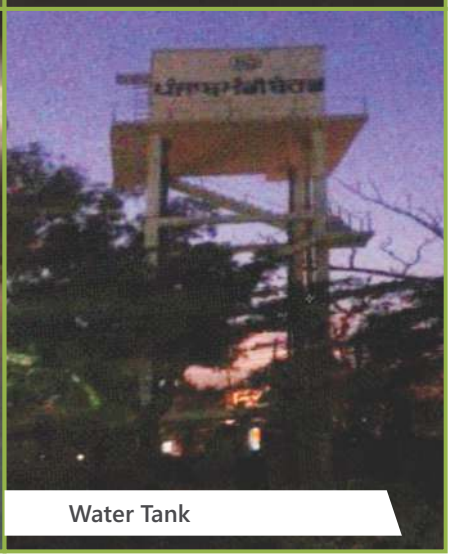

Commission Agent Office with Godown


Internal Road


Electric Pole


Drinking Water Facility


Tea Stall


Water Tank

Gurdaspur APMC - Punjab


Entry Gate of APMC

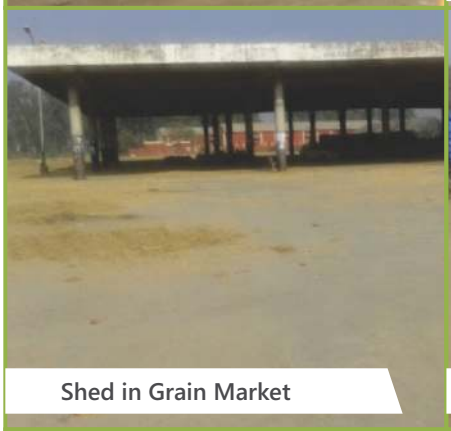

Admin. Building


Display Board


Shed in Vegetable/Fruit Market


Auction Platform in Vegetable /Fruit Market


Internal Road in Veg./Fruit Market


Shed in Grain Market


FCI storage in APMC campus


Shops with Godown


Drinking Water Facility


Electric Poles

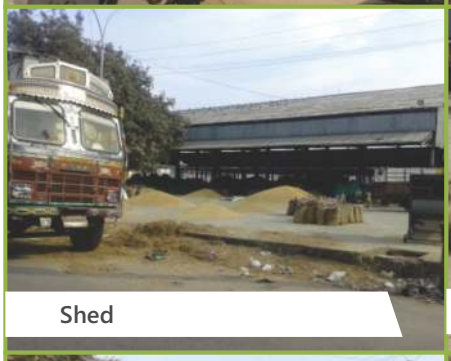

Gunny Bag shop

Jalandhar APMC (Grain) - Punjab

Admin. Office & Display Board


Notice Board


Weighing Bridge


Shed


Auction Platform


Weighing Machine


Internal Road


Parking Area

Commission Agent Office

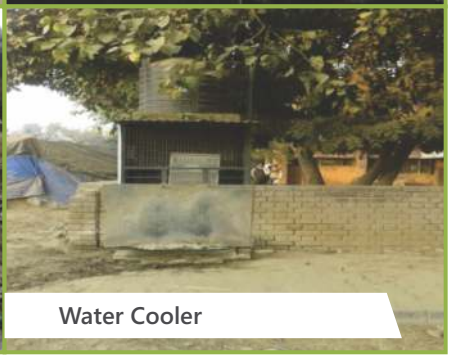

Bardana Shop


Bank


Electric Pole


Tea Stall


Drinking Water


Water Cooler

Pathankot APMC - Punjab

Shed for Temporary Storage

Auction Platform

Weighing Machine

Thresher Machine

Cleaning

Internal Roads

Electric Poles

Pathankot APMC Godown

6.6 Conclusion

Among the sample states, Gujarat has made some progress on upgrading the mandis beyond basic infrastructure and providing the farmers access to other related services such as soil testing facilities.

Also, mandis are moving towards energy efficiency such as biogas, organic waste convertor, etc. Innovative models of garbage disposal and using the same for compost can be adopt universally across all markets as fruits and vegetables invariably generate a lot of wastage.

Across mandis, infrastructure for sorting and grading were found to be missing which need to be made available within the market premises. Now with the rollout of e-NAM wherein assaying is an important element of e-trading, standardised processes need to be followed.

In general, there is immense scope for upgrading mandi infrastructure across the mandis surveyed in the sample states in terms of the following:

- Existing weigh bridges can be computerized, all challans, receipts of payments can be electronically generated, thus reducing human interface and chances of errors.
- Leveraging technology will be most important in markets which handle bulk arrival of commodities to ensure transparency in transactions.
- Packaging facilities can be made available in the market on user charge basis according to the type of packaging like boxes, net bags, crates, etc.
- Primary processing units can be also made available or notify such units as markets where in farmers can directly sell their produce and benefit from assured sale throughout the year.

Section 7

Alternative agricultural marketing channels

7.1 Introduction

Although reforms in APMC laws was perceived as a step in the right direction, it was felt that by itself if may not succeed in bringing in the desired results. Alternate marketing channels to promote direct sale and purchase of agricultural commodities between farmers and agribusiness players began to be set up in the different states since the 1990s. They coexisted with the traditional government regulated marketing channel and offer interesting case studies.

Box 7.1 Examples of Farmers' Markets as alternate marketing channels

Tamil Nadu-Uzhavar Sandhai

The innovative scheme "Uzhavar Sandhai" was introduced by the State Government in 1999-2000 for direct selling of fruit and vegetables by farmers to consumers at a fair price without any intermediaries. The first Uzhavar Sandhai was opened in Madurai in November 1999. At present 164 Uzhavar Sandhais are functioning in the State. In these markets, daily price for the produce is fixed by the team of officials including agricultural officer and representative of farmers' groups. The rate fixed is about 20% more than prevailing wholesale market price and consumers are benefited by getting about 15% less than prevailing retail price. No market fee is levied for transactions in Uzhavar Sandhai. In 2010-11 (upto January 2011), fruits and vegetables worth Rs 3.70 crore had been sold by 9,234 farmers with a daily average throughput of 2,262 MT, thereby benefiting 4.13 lakh consumers.

Andhra Pradesh-Rythu Bazaar

Rythu bazaars in Andhra Pradesh have been established in the State of Andhra Pradesh in year 1999 with prime objective to provide direct link between farmers and consumers in the marketing of fruits, vegetables and essential food items. There are presently 106 numbers of Rythu Bazaars in the State. Both producers and consumers are benefited from Rythu bazaars as producer's share in consumer's rupee is more by 15 to 40 % as compared to other markets and consumers get fresh vegetables, fruits and food items at 25-30 % less prices than the prevailing prices in nearby markets. Further, marketing costs are at minimum level as middlemen are completely eliminated from marketing activities in Rythu bazaars. Market fee is exempted for the transactions in Rythu bazaars. The maintenance expenditure of Rythu bazaars is being met from financial sources of Agricultural Produce Marketing Committee nearer to Rythu bazaars.

Punjab-Apni Mandi

In Apni Mandi in Punjab, there is a direct contact between the farmers and ultimate consumers for sale of the produce. These mandies are called Apni Mandi, as farmer-producers bring the produce for sale directly to the buyers or consumers. Apni Mandi system does away with the middlemen. The Agricultural Produce Marketing Committee of the area where Apni Mandi is located provides all necessary facilities like space, water, shade, counters and balances.

Orissa-Krushak Bazaar

Krushak baazars have been established by State Government and are managed by APMCs. Farmers generally trade paddy, maize and cotton and fruits and vegetables. There are no commission agents/traders operating in these markets.Maharashtra-Shetkari Bazar: The scheme named Shetkari bazaar (farmers/consumers market) is being implemented by Maharashtra State Agricultural Marketing Board since 2003. Term loan upto Rs. 10.00 lakh is advanced to the APMCs for erection of Shetkari bazar. There are 12 Shetkari bazaars operating in the state and 33 additional markets have been sanctioned.

Karnataka-Raitha Santhe

There are 730 Rural Primary Markets where foodgrains and fruits and vegetables are sold mainly by small and marginal farmers directly to the consumers. These markets are managed by the local authorities/ Gram Panchayats.

Maharashtra-Farmers' market

Launched on 14 August 2016, there are 45 farmers' market in Mumbai. The one operational at Vidhan Bhawan brings together 20 FPOs and 12 Farmers' Self-Help Groups from Ahmadnagar, Pune, Satara and Nashik. The average weekly sale is about 25 tonnes worth Rs 10 lakhs. These weekly markets have become popular amongst urban consumers who are able to purchase fresh produce at competitive prices. Farmers benefit from not having to go through the APMC markets and save on commission fees and other charges. There is scope for increasing the number of markets as well as scale of turnover through better organization and improved frequency of these markets.

Source: *Final Report of Committee of State Ministers, In-charge of Agriculture Marketing to Promote Reforms;Ministry of Agriculture, 2013 and CII Primary Survey 2017*

Private markets which come under the regulations of the APMC but are owned and operated by private individuals are also being encouraged. While the functioning of these markets is similar to traditional mandis, the private investor has the incentive to earn 1 percent market fees and farmers benefit (in certain cases) from the proximity of such markets to their fields and saves on transportation costs. There are 37 private markets functional in Maharashtra. Private marketing is subject to the provision of the Maharashtra Agricultural Produce Marketing (Development and Regulation) Act, 1963 (MAPM (D & R) Act) and the Maharashtra Agricultural Produce Marketing (Development and Regulation) Rules 1967, (MAPM (D & R) rules.

Private market licenses are based on proprietorship wherein only one person operates the business, and the income is taxed on the individual's personal income tax return. The applicant is required to have a minimum of 5 acres land and a bank guarantee of Rs 5 lakhs in addition to bank solvency of Rs 10-25 lakhs.

7.2: Case study of Onion Private Market in Ahmednagar, Maharashtra

Prasanna Krushi Market, Padale Aale, Parner, Ahmednagar: private onion market

- Established in January 2016
- License No. Date: PML-44/2016, 02/01/2016
- Amount of Bank Guarantee: Rs 5 lakh (valid until 22/11/2016)
- Market Area: 316 square feet
- The turnover of the market was Rs 30 crore in the last financial year
- Distance from other mandi: Aale Phata Mandi – 18 Km Junnar Mandi - 20 km Parner Mandi - 25 km
- Onion farmers from Ahmednagar, Sangamner, Junnar, Parner, Shirur (Nagar and Pune) come to this private mandi to sell their produce. This market covers 40 to 50 villages and nearly 24,000 farmers registered under this mandi. The owner being an erstwhile commission agent leverages the existing relationship with the farmers and also the buyer -trader network.
- There are 10 shops allotted to commission agents who also operate as traders. There are other traders who purchase over phone without actually being present in the market
- Charges/Taxes Applicable on the Mandi: 1.05% cess paid by purchaser to the private market out of which 1% market fee goes to the owner of the market and 0.05% deposited to the marketing board towards supervision charges. Purchaser pay 6% to the commission agent as his/her fees which was previously paid by the farmers.
- Conventional callout auction is conducted in the private market. It was reported that during peak season, registered commission agents conduct the auction with traders (physically present as well as those who participate over phone). While in off season, it was observed that a single person called out the auction prices (on the basis of purchase orders he received on phone and a couple of traders and commission agents present) and conducted the sale

Source: *CII-FACE Primary Survey 2017*

7.2 Terminal markets

Model Terminal Markets have been conceptualized and proposed to be established under the public private partnership model through the establishment of main market and collection centers. The scheme is being implemented through a subsidy route under National Horticulture Mission as proposed during the 11th Five Year Plan.

Haryana State Agriculture Marketing Board (HSAMB) has taken a major initiative of setting up an Ultra-Modern Terminal Market for Fruits and Vegetables at Rai, Haryana, with the help of the Central Government at an estimated cost of Rs 65 crores with a capacity of more than 1000 metric tonnes per day. This market will cater to registered bulk buyers and exporters and will have electronic grading-sorting lines, cooling chambers and electronic bidding systems. The model also envisages setting up of collection centers in selected villages in a catchment area of 50 kms, in the first phase of the project. These collection centres will provide facilities of grading and sorting, information, banks and insurance to the farmers.

A Terminal Market for apples was established in 1992 in Parwanoo, Solan district in Himachal Pradesh. Since 2009 trade of quality apples (packed in boxes) started and took off on a larger scale since 2013. The market now also registered under e-NAM is operational from July until November when apples arrive from all over Himachal Pradesh as far as Kinnaur. Spread over an area of 75 bighas, the market has an auction platform, storage shed, administrative office and shops for about 80 commission agents. About 131 commission agents and 100 to 150 traders operate out of this terminal market during apple season. The total turnover of the market since it has been operational in 2014-15 was Rs 145.7 crores (i.e. 23,733,31 boxes at the rate of 20 Kg per box approximately) and increased to Rs 209.4 crores (i.e. 30,557,19 boxes) in 2015-16 and Rs 194.5 crores (i.e. 18,411,48) in 2016-17. The market being closer to Chandigarh and Delhi and well connected with other parts of India, attracts large number of traders and farmers who operate through the commission agents. However, the market does not have any collection centres which could help farmers save the time and cost of travelling all the way to Parwanoo. Also, the market is not equipped with cold stores, warehouse for holding onto arrivals, if required.

Considering the flow of arrivals during peak season, it is important to modernize such terminal markets with amenities and services that help smoothen market operations. Providing facilities related to sorting, grading, packaging and storage can help farmers realize better prices for their produce. Public private partnership (PPP) channel can be explored to bring in large investments in setting up the required infrastructure and services.

7.3 Farmer companies and producer organizations

The National Advisory Council (NAC) recommended the creation of farmers companies with the objective of facilitating better price realization for the small farmers. To this effect, the Council proposed fund allocation under the existing centrally sponsored schemes. In its recommendation, NAC endorsed the recognition of farmers' bodies under the APMC Act and suggested the establishment of an apex body to support these associations and heighten access to investment capital for the agricultural sector. The council believed that such small holder collectives would help to address many farm related issues including input issues and hence help in risk mitigation.

The Ministry of Agriculture and Farmers' Welfare (MoA&FW) came up with guidelines to support the formation of such farmer-producer organizations (FPOs). Small Farmers' Agri-business Consortium (SFAC), a registered society under Department of Agriculture, Cooperation & Farmers' Welfare, is promoting FPOs by mobilizing the farmers, helping them in registering as company and giving them training for their sustainability. SFAC holds the view that large companies and retail chains prefer to deal with farmers' organizations rather than individuals while sourcing farm products. As of January 2018, SFAC has helped 666 FPOs in registering as companies. Further to this, SFAC provides matching equity grant subject to maximum of Rs 10.00 lakh per Farmer Producer Company. SFAC also supports FPOs through Credit Guarantee Fund Scheme, which provides a Credit Guarantee cover to Eligible Lending Institutions to enable them to provide collateral free credit. Under Venture Capital Assistance scheme, an interest free loan is provided to FPCs/entrepreneurs by SFAC to meet shortfall in the capital requirement for implementation of the agribusiness project. In further efforts to strengthen FPOs and support the member farmers, State Level Federations of FPOs have been created. The key objectives of the federation are to achieve better coordination among FPOs; enable them to enter into policy dialogue with the state and central agencies; access services and inputs from Government and private agencies; increase capacity in cost effective manner; seek credit from financial institutions; leverage opportunities in agribusiness. In the first phase, 8 such State Level Producer Companies (SLPCs) have been operational in Madhya Pradesh, Rajasthan, Maharashtra, Gujarat, Tamil Nadu, Uttar Pradesh, Telangana and West Bengal[11]. Additionally, National Bank for Agriculture and Rural Development (NABARD) is also promoting FPOs in the States. They provide grant support to existing FPOs towards capacity building, market linkages etc. along with the credit support for business development from Producer Organization Development Fund (PODF) under which NABARD has supported 221 existing FPOs.

Given the rapid increase in the number of FPOs, issues of access to finance to establish FPOs, access to affordable working capital and investment credit, etc. has gained center stage. The current FPO policy landscape in India reflects cognizance of the imperative financial supported needed by FPOs.The Policy and Process Guidelines for FPOs lays down the framework for ensuring dedicated fund flow from the Rashtriya Krishi Vikas Yojana (RKVY). An Equity Grant and Credit Guarantee Fund Scheme for FPOs launched in 2014to grant to double member's equity and seek collateral free loans from banks. NABARD has been financing FPOs since 2011 under the 'Producers Organization Development Fund'. Recently, favourable tax treatment has been announced for FPOS in the 2018-19 budget announcement, with 100 per cent tax deduction for FPOs with annual turnover of upto Rs 100 crore.

Despite the number of enabling and support measures available, there are several challenges faced by FPOs including challenges in mobilising working capital and investment credit and high interest rates. Further, despite RBIs directive to banks on financing of FPOs, response in this sector needs greater momentum.

[11] http://sfacindia.com/State-Level-Producer-Companies.aspx

7.4 Private sector led agribusiness models

While the bulk of agricultural commodity marketing is done through Government regulated marketing network, private players (both domestic and multinationals) have been in this arena for a long time – working directly with farmers across value chains and geographies. The experience of private players engaging directly with farmers has been a mixed bag and there has been significant churning in terms of several players (big and small) exiting and at the same time new players foraying into the space through joint ventures, diversifying portfolio, green-field investments and the like. Companies which have ventured into direct farmer linkages can be categorized as follows:

1. Companies into front end retail or wholesale business tying up with farmers to ensure smooth supply lines.
2. Companies into B2B segment, supplying to retail outlets with their own brand name, HoReCa business.
3. Companies into processing business and interested in sourcing specific quality of raw material.
4. Companies catering to export markets that have stringent quality norms and hence important to ensure that the right practices are followed at the farm level.
5. Companies already into agribusiness such as seeds, fertilizers, mechanization, etc diversifying their portfolio to support client farmers and beyond and serving as one stop shops for delivering services.

There have been several variants of private sector engagement in the area of agribusiness. For instance, companies enter into contract farming wherein they offer fixed price (as per quality), buyback guarantee to the farmers. In certain cases, companies provide access to quality inputs, facilitate access to credit, insurance i.e. provide backend support to ensure farmers have the right resources to deliver quality produce. Contracts in most of the cases are informal engagement and do not have a legal sanctity and farmers are free to sell to anyone they wish to. The benefit of direct farmer buyer engagement lies in better and assured price realization for the farmers, access to better technology and inputs and in some cases risk coverage. Companies have been also working with farmer producer organizations (FPOs) to overcome scale issues.

Private sectors working directly with farmers go back to 1989, when PepsiCo India ventured into agro-business of tomato cultivation in partnership with the Government of Punjab with a particular focus on exports of value-added processed foods. There have been several other companies (domestic and multinationals) like ITC, Tata Chemicals, Bharti – FieldFresh, Mahindra and Mahindra, Hindustan Unilever Limited (HUL), Desai Fruits & Vegetables, McCain, The Global Green Company Limited, etc who have ventured into direct sourcing of commodities such as grains – wheat, soyabean, pulses, rice, gherkin, tomato, potato, chillis, grapes, banana, etc.

Over time, most of the companies have expanded their scale of operations –extent of engagement with the farmers, presence across states, improved farm practices, moving towards certification and adherence to food safety and quality norms, and overall business volumes. Also, companies have further strengthened their farmer connect by establishing backward linkages, delivering essential farm services to the farmers.

Increasing farmer linkages across states and value chains

PepsiCo India through its 360-degree farmer connect program has enabled nearly 24,000 farmers across nine states (West Bengal, Maharashtra, Punjab, Gujarat, UP, Karnataka, Bihar, Haryana and Chattisgarh) to benefit from higher incomes through access to new seed varieties, technologies and sustainable farming practices[12]. More than 45 per cent of these farmers are small and marginal with a land holding of one acre or less. Mahindra Shubh Labh Services Limited (MSSL) a leading exporter of grapes works with nearly 700 farmers in Maharashtra to cater to the export markets in Europe, the UK, Saudi Arabia, Malaysia, etc under Saboro brand[13]. Desai Fruits & Vegetables works with nearly 1,000 farmers under contract arrangement.[14] Deepak Fertilizers and Petrochemicals Corporation Limited, Pune, Maharashtra acquired a 49 per cent equity in 2011. Mother Dairy Fruits and Vegetables Private Limited sources fresh fruits and vegetables directly from 2,784 farmers spread across Delhi, Haryana, Himachal Pradesh, Orissa, Punjab, Rajasthan, Uttar Pradesh and Uttarakhand. Nearly, 63 per cent of the procurement of fruits and vegetables is done directly from farmers in different states. Field Fresh Foods Private Limited, a joint venture between Bharti Enterprises & Del Monte Pacific Limited engages with 4000 farmers across 5000 acres in Punjab & Maharashtra, growing export quality vegetables (baby corn, sweet corn, chilli, basket of herbs, snow peas (mange tout) and sugar snap) for the European and UK markets. In addition to these players, there are several others at the national and regional level who are working with farmers for direct sourcing of agricultural produce. Other players like Jubilant Fresh, a leading supplier of farm fresh produce to Quick Service Restaurants (QSR) and Fast Food Joints across north India deals in fresh produce, ready-to-cook and healthy ready-to-eat solutions. Significant volumes of fruits and vegetables are sourced through contract farming which allows the company to monitor product quality at the farm level.

Improving backward linkages on delivering key agri inputs and services

Another popular model of direct engagement with the farmers has been through the rural business hubs (RBHs), essentially one-stop-shop in rural areas that offer various agri related services to the farmers ranging from seeds, agrochemicals, crop advisory and extension services, access to finance and/or technology enabled information on price, weather, etc. Tata Kisan Sansar (TKS) is a network of nearly 600 farmer resource centres that caters to more than 3.5 million farmers in 22000 villages in the northern and eastern part of India. ITC e-choupal launched in 2000 caters to more than 4 million farmers growing soyabean, coffee, wheat, rice, pulses, shrimp across 35,000 villages through 6,500 internet based kiosks in Madhya Pradesh, Haryana, Uttarakhand, Karnataka, Andhra Pradesh, Uttar Pradesh, Rajasthan, Maharashtra, Kerala and Tamil Nadu. In addition to these models, private players like Mahindra and Mahindra through Samridhhi Centres (about 100 of them currently) are reaching out advanced technologies and best practices to the farmers. Desai Fruits and Vegetables through the Desai Initiative for Agricultural Education (DIAE) (launched with the support of GIZ) is aimed at educating farmers on agricultural practices through partnership farming.

In most of the cases, the services are subsidized but not provided free to the farmers who find merit in availing these for a price given the benefits in terms of better price realization for quality produce. Many of the private players have

[12] Information for 2011-12
[13] Information for 2014
[14] Information for 2010-11

deployed dedicated agronomists at the farm level either directly with the farmers or through lead farmers, demonstrating best practices, educating farmers about right farming practices, etc. Facilities such as soil testing is also being provided in many cases. Such institutions have helped farmers access relevant information and adopt better farming practices and also have served the business interests well in terms of ensuring quality supply.

Greater uptake of improved farm practices

With private players sourcing directly from farmers, a visible shift towards improved farm practices has been observed. Farmers have the knowhow and access to technology that allows them to undertake farming in an energy efficient and sustainable manner. FieldFresh Foods Private Limited through Agriculture Centre of Excellence (ACE) at Ladhowal, Ludhiana in Punjab have been showcasing advanced technologies and agricultural and demonstrating best practices to partner farmers in order to help them enhance agricultural productivity and farm income in an environmentally sustainable manner. This has helped farmers improve their ability to grow crops which meet the specific requirements and follow practices that adhere to global standards. Mahindra Samridhhi Centres have been delivering services like soil testing, irrigation solutions, crop care and other critical services to the farmers.More than 1200 farmers received an improved variety seeds of rabi wheat and kharif paddy, pigeon pea, black gram and soyabean in 2012, of which most of them registered 25-30 per cent increase in productivity. Farmers have registered upto 50 per cent increase in yield of grapes as part of the Khet Se Khaliyan Tak (KSKT) initiative of Mahindra Subhlabh Services Limited (MSSL). Farmers have benefitted from availing micro irrigation services provided by EPC- Mahindra. In a particular case, yield of chilli increased twofold by switching from flood to drip irrigation. While total cost of cultivation increased from Rs 83,600 to Rs 109,087 (30 per cent increase), net returns to the farmer increased from Rs 28,900 to Rs 135,913 (307 per cent increase). PepsiCo India is leading a pioneering initiative to replace transplanting of paddy with direct seeding technology. This has helped farmers reduce water consumption in paddy cultivation by 30 per cent and reduce greenhouse gas emissions by 75 per cent. PepsiCo India is working with farmers in water-scarce areas in Maharashtra, Gujarat, Karnataka and Haryana over 3,000 acres to adopt drip irrigation. The company is providing buy back guarantee incentive to adopt drip irrigation, as well as supporting design of agricultural equipment to make drip irrigation commercially viable for farmers.

Increasing compliance to food safety and quality norms

The private players catering to the export market particularly the US, UK and Europe are required to follow process of traceability, testing of produce for residuals, etc to comply with global standards and norms of food safety and quality. While all the companies have acquired the required licenses and certification, they also ensure that the processes are followed at the farm level and farmers are fully compliant. This journey of certification and compliance has not been easy for several companies, irrespective of their size of business and experience in the sector. However, over time and continuous hand holding with the farmers in several cases have helped them meet the global standards and expand their footprint in the overseas markets.

Field Fresh Foods Private Limited complies with Global GAP guidelines not only in company managed farms but across all partner farms. The manufacturing facilities and pack-houses in Punjab & Maharashtra are certified by Food Safety Management Systems (FSMS) (ISO: 22000: 2005) and British Retail Consortium (BRC). Good Agricultural Practices and QMS have enabled

FieldFresh to achieve highest levels of quality standards certified by internationally reputed bodies like SGS. Mahindra Subhlabh Services is also Global Gap, BRC and SGC certified. Jubilant Fresh facility is ISO 22000:2005 certified and undergoes yearly third-party audits to ensure QMS & FSMS adherence. The company sources fresh and strives to secure complete traceability down to the farms. In the wholesale business of grapes, the company sources fresh produce from GlobalGap compliant farms.

7.5 E-Commerce in fresh agricultural produce

The food and grocery industry in India is worth $383 billion and is expected to touch $1 trillion by 2020 (Technopak, 2015). E-commerce in food and grocery retail has picked up rapidly in India over the past few years. The top five online grocery start-ups in India have raised over $120 million in 2015. As per other estimates, the total funding to the top five online grocery start-ups has exceeded $400 million since 2011. According to Tracxn, there are at least 490 grocery delivery start-ups in India that have together raised at least $486 million from investors. About four years ago, several e-commerce start-ups emerged in the food and grocery segment but many of these didn't survive due to lack of investment and adequate consumer base.

To begin with, growth of e-commerce in food and grocery fuelled by changing lifestyle resulting in demand for convenience has witnessed massive investments. In addition to providing convenience, e-commerce has been popular for providing heavy discounts, and incentivizing online purchase compared to those offered by brick and motor stores. Also, rapid proliferation of mobile and online shopping apps and delivery services have resulted in the evolution of e-commerce in grocery and fresh.

In India, e-commerce supply chains have been quite successful for lifestyle, FMCG, and items alike. While that of food (including restaurants and food joints) and grocery are still evolving, there is great opportunity for e-commerce supply chain in fresh and perishable food items. Alongside, exclusive platforms, e-commerce services have become popular as add-on services of retail outlets. As is evident, much of this new trend is driven by internet and mobile technology and a large proportion of the aspirational population segment availing net banking, credit card, online payment vouchers and thereby substituting cash payments.

E-commerce in the food and grocery segment can be categorized into those comprising of cooked and ready-to-cook food, beverage, bakery (restaurant, food joints, coffee shops, bakery, etc); fresh fruits, vegetables, meat, fish, milk and similar products; grocery items – flour, rice, pulses, edible oils, etc. The typical formats that have emerged are hyper-local and inventory with warehouse at the backend models. Currently, Grofers (2013), Jugnoo (2014), Zopnow (2011) make up the hyperlocal model in India sourcing produce from stores and suppliers locally and delivering to the customer. Big Basket (2011) follows an inventory with warehouse model but is also experimenting the hyperlocal model by tying up with nearly 1800 local grocery stores which accounts for 5 per cent of the total revenue. Grocermax (2015) is a hybrid model and 60 per cent of its orders are "flow-through" in which it collects orders until 11 am in the day and then aggregates. This model is less of on-demand and caters to planned purchases.

While the advantage of the hyperlocal model is that it is not as asset heavy as the inventory and warehouse model; the disadvantage in the hyperlocal model is that there is no control on quality and volumes. The business is dependent on quantity and quality available locally. Also, the margins are higher in the inventory and warehouse model than in hyper locals (based on commission of 2-10 per cent on the order placed). Across models, the initial challenges facing these start-ups have been sourcing human resources (delivery person), getting in place infrastructure and logistics and bearing the cost of inventory management as well as attracting funding.

Ending 2015, investment in e-commerce startups has slowed down owing to losses

from inadequate sales revenue. While Local banya (2012) shut down in December 2015, Pepper Tap (2013) closed down in early May 2016. Contrary to the trend, Big Basket raised fresh funding of $150 million and is looking at expanding business in Tier II cities. Grofers raised a fresh funding of $120 million in November 2015. A recent entry, Gorcer max raised US$ 2 million in 2014. As observed in the case of brick and mortar food and grocery retail business in India, this segment will also see a lot of churning with players exiting the space and at the same time new ventures and investments happening.

Particularly, with the Government's vision on transforming agricultural marketing in India with e-platforms leveraging technology for price discovery, assaying of quality to deliver higher returns to the farmers as well as better prices to the consumers, e-commerce in fresh agricultural produce could find a place. Also, e-commerce can be one of the models providing farmers the package of services like the brick and mortar stores. With Grocermax already sourcing fresh vegetables and fruits from Azadpur mandi in Delhi, it could do the same from farmers directly if the logistics and economics work out. Also, models like the SFAC Kisan Bazaar that provides a platform for farmer producer companies to supply directly to big retailers, exporters, HoReCa and e-commerce players can find more traction.

7.6 E-Markets

Virtual markets are also being set up allowing producers to connect with buyers all across the country thereby providing a mechanism for ensuring transparent prices and cost reduction by getting rid of intermediary activities. Some states have started setting up online extension services.

Rashtriya e-Market Services (ReMS), a joint venture between NCDEX Spot Exchange and the Karnataka government, is a first-of-its-kind unified market platform (UMP) in Karnataka to provide an electronic auction system across the state to facilitate transparent price determination and make available timely online payments.

The single market platform integrates 51 markets and aims at covering all the 155 main market yards and 354 sub yards. Since its launch on 22 February, 2014, 7.5 lakh lots of trading have been recorded with 45 lakh bids. Transactions on the platform are worth Rs 15,000 crore. It has accommodated lakhs of farmers, 31,473 traders and 17,149 commission agents for 92 regulated commodities. ReMS offers a host of services including automated auction, assaying facilities in markets, warehouse-based sale of produce, price dissemination and other services such as weighing of the produce, invoicing and accounting, market fee collection, and payment of sale proceeds directly to farmers. It also offers secondary market development and capacity building for the participants. ReMS allows trading through a single license across the districts of Karnataka.

E-tendering of mango trading: The Karnataka High Court has made e-tendering of mango trading mandatory to prevent exploitation of mango growers. Following the High Court order, the APMC committee at Srinivaspur has launched web-based e-tendering in the mango market. The APMC secretary stated that computers had been installed on the APMC premises and traders and agents have been trained for the same .

National Spot Exchange Limited (NSEL) commenced operations in **Gujarat** since October 2008. Over 1.65 lakh farmers have benefited from the e-trade in castor seed through better price realization (at 1.5 - 2.5 per cent higher than the mandi price) as certified by Gujarat State Agriculture Marketing Board. However the spot exchange mechanism needs to have a proper legal regulatory framework to ensure the protection of the farmers. Discrepancies were reported in data released by NSEL in Gujarat. Traders also reported that NSEL's operation techniques did not suit them as it entailed long settlement periods. The Government has been considering a new regulation for spot commodity exchange as there are three such exchanges but no single regulator.

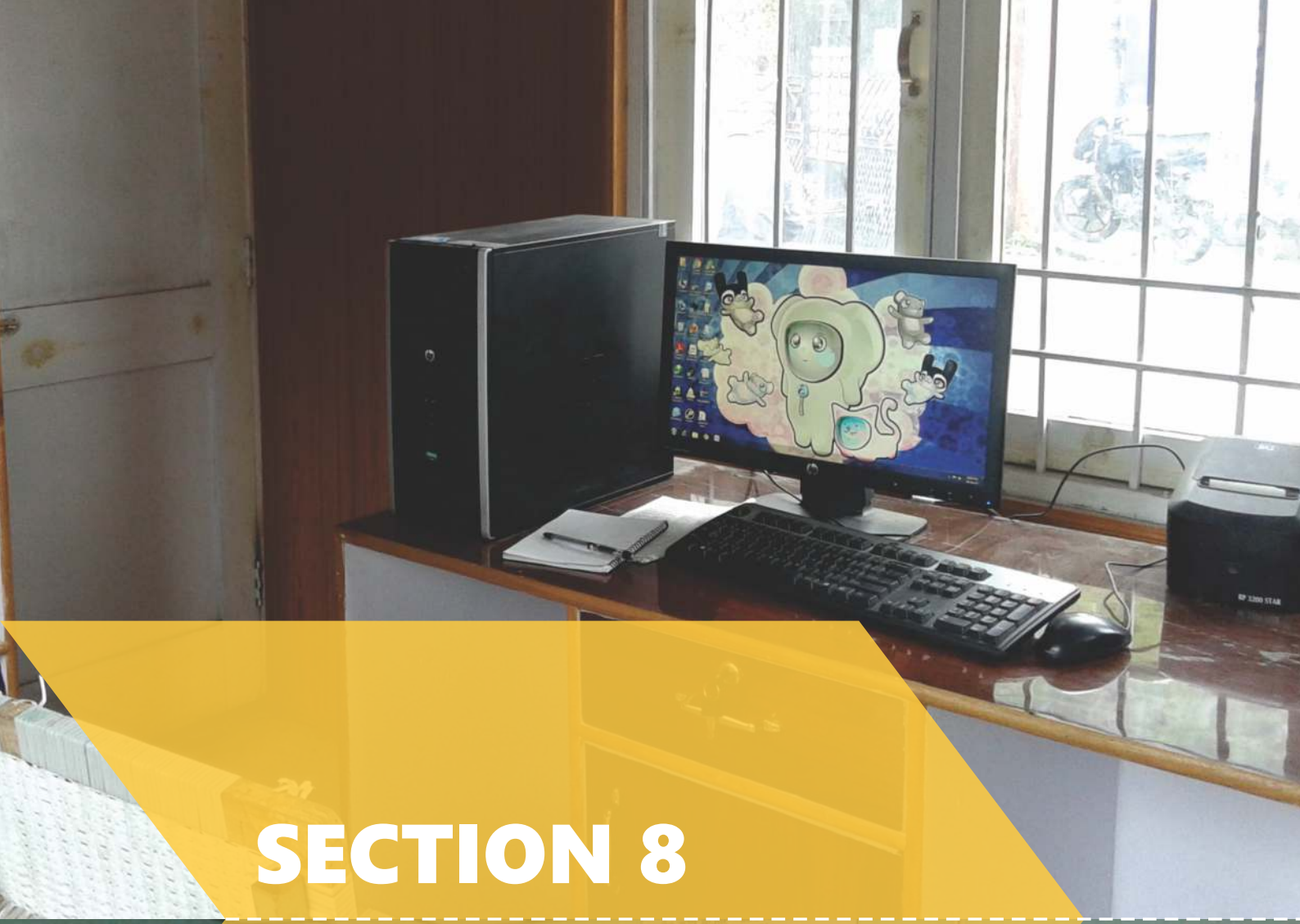
Maharashtra State Agriculture Marketing Board (MSAMB) under a World Bank Project has launched five e-markets in agriculture similar to Karnataka. The project is at a pilot stage.

7.7 Conclusion

With increasing demand for safe and quality food, both in the global and domestic markets, it has become imperative for companies to ensure compliance to highest food safety standards and norms at the manufacturing as well as farm level. It is in the business interest of the companies to control supply lines and particularly in the Indian terrain where farming is largely scattered and subject to diverse climatic, soil and water conditions. Also, with asymmetric information, farmers often do not have the knowhow about the right practices. Herein direct linkages with farmers have worked well in addressing the issues related to access to quality inputs such as seeds, agrochemicals, crop care, and extension services. To a limited extent these linkages have enabled improved access to finance, insurance, etc. However, the overall score of contract farming, partner farming, and alike models has been a mixed bag in India. While the initiatives have had positive impact on farmers income, and farm productivity, often sustaining the same over a period of time and replicating the success in other geographies and value chains has been a challenge.

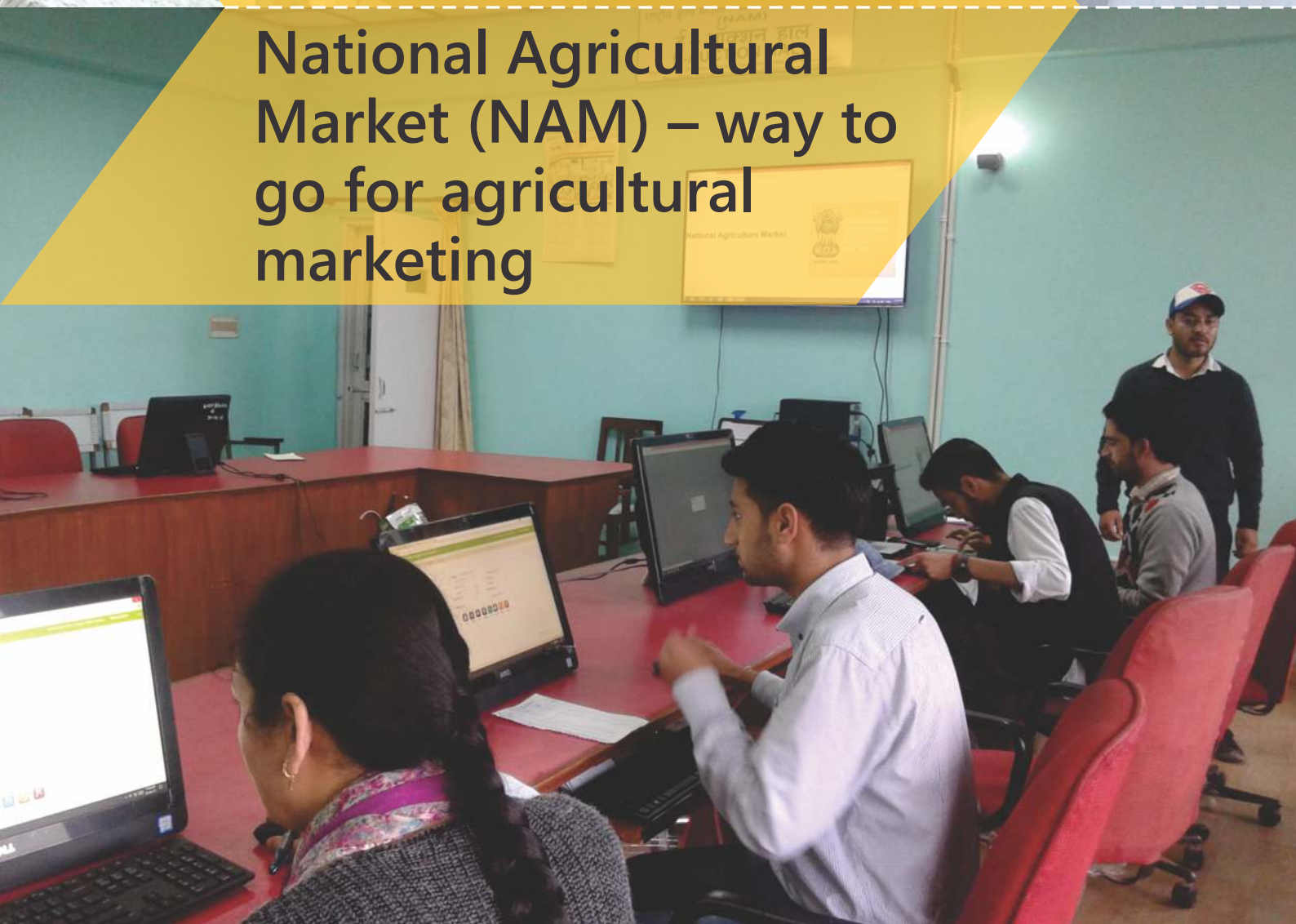
Unlike the mandi system, private sector led models have the limitation of sourcing very large quantities given their limited demand; there are quality parameters which form the basis of price realization; need to adhere to stringent standards require handholding farmers and close monitoring; cost of sourcing from small and marginal farmers require companies to source from farmer groups, FPOs and the like. For domestic retailing, and processing, companies still have the liberty to source from mandis while also trying out models of direct sourcing from farmers. However, the success of direct linkage with farmers is observed more in the case of export players who need to control the supply lines in terms of compliance to food safety standards and traceability. Also, in the case of agribusiness companies who have a large presence in the agricultural sector and have diversified portfolios offering package of services to the farmers, buyback guarantees have worked out well.

In order to strengthen direct sourcing models led by the private sector, it will be important to bring about policy and institutional changes that allow consolidation of farms in the form of farmer groups, companies. This will allow the front-end players to source at scale reducing costs of direct sourcing. Also, players sourcing directly from the farmers should be relieved of mandi taxes and fees which are originally designed for players availing mandi infrastructure and services. Further, the policy norms on stocking needs to be defined and moderated appropriately to allow private investments in setting up infrastructure and logistics for storage and movement of agricultural produce. While Government regulated marketing channels will continue to exists and both buyers and farmers will transact out of these market yards, direct farm-firm linkages should be encouraged particularly in those commodities which are most susceptible to price fluctuations ranging from staples to fresh high value produce. A certain policy environment and appropriate incentives will help attract private sector investment in infrastructure, logistics, technology and on farm activities which will in turn incentivize farmers to adopt improved and sustainable farming methods. Aligning with the vision of doubling farmers' income by 2022, such models of direct linkage will contribute significantly towards mitigating risks and increasing net returns to the farmers.



SECTION 8

National Agricultural Market (NAM) – way to go for agricultural marketing



8.1 Progress on implementation of NAM

NAM was launched on 14th April, 2016, in 21 markets in 8 States on pilot basis in the following mandis (table 8.1). The commodities proposed were wheat, chana, mustard, onion, paddy, turmeric, maize, etc.

Table 8.1 State-wise list of mandis for Pilot launch

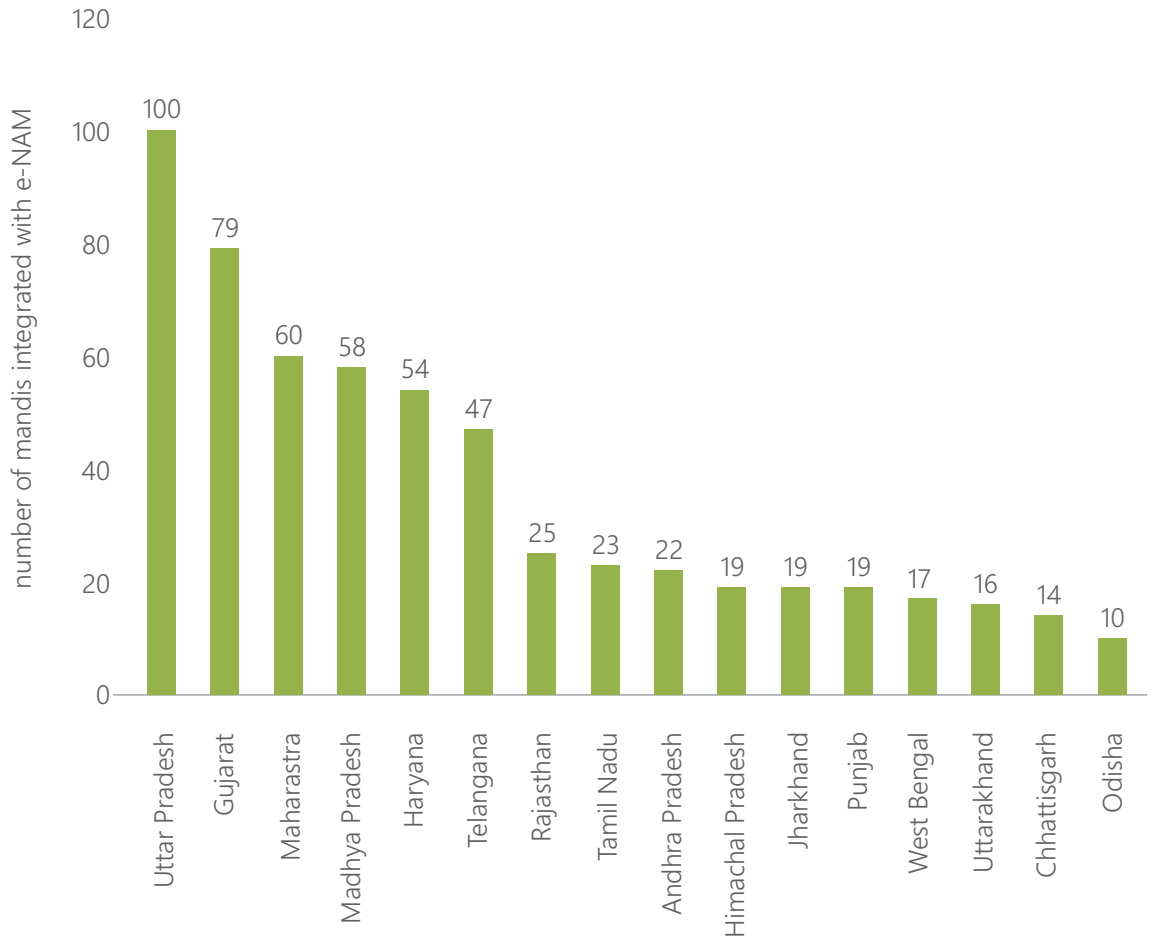
S.No.	State	APMC	District	Commodity proposed
1	Gujarat	Patan	Patan	Castor Seed
2		Botad	Bhavnagar	Chana (Black Gram)
3		Himmatnagar	Sabarkantha	Wheat
4	Telangana	Tirumalgiri Bhavnagar	Nalgonda	Paddy
5		Nizamabad	Nizamabad	Turmeric
6		Badepally	Mahboobnagar	Maize
7		Hyderabad	Hyderabad	Onion
8		Warangal	Warangal	Maize
9	Rajasthan	Ramganj Mandi	Kota	Chana (Black Gram)
10	Madhya Pradesh	Karond, Bhopal	Bhopal	Chana (Black Gram)
11	Uttar Pradesh	Sultanpur	Sultanpur	Wheat
12		Lakhimpur	Lakhimpur Kheri	Wheat
13		Lalitpur	Lalitpur	Wheat
14		Bahraich	Bahraich	Wheat
15		Saharanpur	Saharanpur	Wheat
16		Mathura Sultanpur	Mathura	Wheat

S.No.	State	APMC	District	Commodity proposed
17	Haryana	Ellanabad	Sirsa	Mustard
18		Karnal	Karnal	Wheat
19	Jharkhand	Pandra, Ranchi	Ranchi	Mahua Flower & Tamarind
20	Himachal Pradesh	Fruit Mandi, Solan	Solan	Shelling Peas
21		Dhalli, Shimla	Shimla	Shelling Peas

As of March 2018, 585 mandis across 16 states and 2 Union Territories (UTs) have been integrated onto the e-NAM portal.So far, 73.5 lakh farmers, 1.01 lakh traders and 53,163 commission agents are registered on e-NAM portal and the total traded value is Rs 36,275 crore from the trading of 1.52 crore tonne produce.

The key commodities being traded are grains, Basmati rice and pulses, while the share of horticulture produce being traded is marginal.

Figure 8.1: State-wise number of Mandis Integrated with e-NAM



Source *http://pib.nic.in/newsite/PrintRelease.aspx?relid=160668*

8.2 Key observations from the sample survey of e-NAM markets

Details of the sample markets and scope of survey

A field visit was undertaken in the states of Telangana and Himachal Pradesh in selected markets to understand the status of implementation of e-NAM and the experience of the stakeholders including farmers, traders, commission agents and market functionaries.

e-NAM is at its early phase of roll out and involves huge administrative efforts in setting up the right infrastructure, conducting training and capacity building programs to adopt the technology driven operations and convince stakeholders about the need and benefits of moving from physical auction to e-trading. Table 8.2 summarizes the districts and markets covered to study the experience of e-NAM.

Table 8.2 Details of the markets, commodities and stakeholders under e-NAM in sample states

State	District	APMC market yard/sub yard	Commodities traded under e-NAM	No. of participating farmers	No. of participating traders	No. of participating commission agents
Telangana	Rangareddy	Vikarabad	Redgram,Maize, Green Gram, Ajwain, Bengal Grain, Turmeric, Soya	NA	23	47
Telangana	Rangareddy	Tanduru	Redgram, Maize, Green Gram, Black Gram, Ground nut, Sunflower and Paddy	NA	73	70
Telangana	Mahboobnagar	Badepally	Ground nut, Maize, Paddy, Cotton and Red Gram	NA	98	58
Telangana	Mahboobnagar	Baupally	Ground nut, Maize, Paddy, Cotton and Red Gram	NA	74	73
Telangana	Hyderabad	Malakpeth	Chilli	NA	149	151
Telangana	Sangareddy	Zaheerabad	Bengal Gram, Safflower, Red Gram	NA	69	50
Himachal Pradesh	Shimla	Dhalli Shimla	Peas, Cauliflower, Cabbage, French Bean, Capsicum, Potato	5463	352	49
Himachal Pradesh	Shimla	Bhattakufar Dhalli	Apple, Plum	2762	103	51
Himachal Pradesh	Solan	Solan	Garlic	4234	424	92
Himachal Pradesh	Solan	Parwanoo	Apple	549	121	131

Source *CII-FACE Primary Survey 2017*

Flow of activities under e-NAM

The objective of introducing e-NAM is to ensure that all market transactions including entry, exit, bidding, weighment and assaying are digitally recorded and all payments are made electronically (ideally through the e-NAM payment gateway) that accords completely transparency. In addition to this uniform levy of market fees and other charges will enable creation of a unified market wherein demand at an all India level will determine prices and farmers can actually benefit from higher prices with greater access to markets.

Typically, the process involves the following important steps which are designed to ensure that there is transparency in market transactions and price discovery takes place in a competitive manner based on the quality of produce:

1. Creation of lot ID putting together details of the seller, address, commodity, quantity
2. Collection of samples for assaying
3. Digital creation of bid by putting together information the quality, quantity available for sale in addition to that of the farmer and commission agent involved
4. Online bidding is opened for a specified time period wherein traders within the market, across state and in future India can bid for a particular lot and the quantity mentioned therein.
5. Bid declaration which announces the name of the winning farmer for a particular commodity and other details and the name of the purchaser trader. This information is shared through a callout as well as sharing of printed hard copies in addition to the digital alerts sent to the winning purchaser.
6. Farmer has an option not to sell the produce if he doesn't like the price and can initiate a bid cancellation if necessary. In this case, the bid is cancelled and the farmer holds on to the produce for e-bidding the next day.
7. Once the final bid is acceptable, a sale invoice is generated which specifies the type, quantity, quality, price per unit, total amount payable by the purchaser trader to the farmer and the various market fees, commission fees and other market service related charges to be paid.
8. Payments are to be made on the same day by the purchaser trader through the e-NAM payment gateway which is then directly transferred into the account of the seller-farmer, and market committee as per the respective dues.
9. An exit pass for the vehicle is generated after the payment has been made.

It is observed that the process is still evolving and there are changes occurring at various stages of the design and implementation of the model considering the experiences at the market level and need to adapt and accommodate local issues.

e-NAM Process


Weighing Bridge


Computerized System at Entry Gate

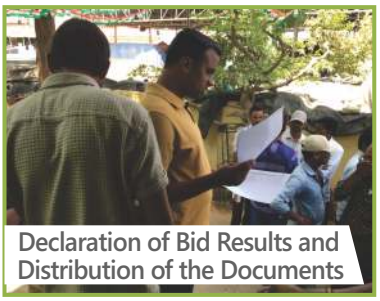

Generation of Lot ID


Assaying Lab


Assaying Lab Instrument


Display of Sample Produce for price determination based on quality


Auction Hall


Declaration of Bid Results and Distribution of the Documents


Post Bid Declaration Discussions amongst Market Stakeholders


Vehicle Loading with Auctioned Commodities


Computerized Exit Gate Counter for Generating Gate Pass

Observed functioning of e-NAM Markets

With 16 states and 585 markets already enrolled on e-NAM and operational, and 73.5 lakh farmers registered on e-NAM portal with a turnover of Rs 36,275 crore from the trading of 1.52 crore tonne produce, it is important to understand the significance of these numbers and following the current trend, how NAM is likely to shape up. Appreciating the fact that it is a mammoth task to streamline and unify agricultural markets, some of the key aspects of the current functioning of sample e-NAM markets indicate that there remains much to be achieved beyond these numbers. Hence the focus and attention should be on the issues that need to addressed at the state, district and market levels.

Market infrastructure and Assets

The sample markets have most of the required infrastructure facilities and assets for functioning of e-NAM (Table 8.3a and 8.3b). Given that most of the markets spent the initial months on raising awareness amongst farmers, traders and commission agents, training officials and acquiring skilled manpower, etc, they are still in the process of getting started in full swing.

Infrastructure and manpower related to assaying is being put in place by most of the markets which is the most critical component of NAM and ensure e-bidding is successful.

Table 8.3a Details of infrastructure by sample markets

State	District	Name of APMC/ Subyard	Office Building	Auction Hall/ Covered Shed	Warehouse /Storage	Electronic Weigh Bridge	No. of Godowns	Soil Testing Lab	Assaying Lab
Telagana	Rangareddy	Vikarabad	Yes	Yes	Yes (2 warehouse; 5000 mt each)	No	No	No	No
Telagana	Rangareddy	Tanduru	Yes	Yes (9)	No	No	No	No (In Plan)	Yes
Telagana	Mahboobnagar	Badepally	Yes	Yes (4)	No	No	No	No	Yes
Telagana	Mahboobnagar	Baupally	Yes	Yes (3)	No	No	No	No	Yes
Telagana	Hyderabad	Malakpeth	Yes	Yes (1)	No	No	Yes (2) 400 mt and 500 mt	No	No
Telagana	Sangareddy	Zaheerabad	Yes	Yes	No	No	No	No	Yes
Himachal Pradesh	Shimla	Dhalli Shimla	Yes	Yes	No	No	No	No	Yes
Himachal Pradesh	Shimla	Bhattakufar Dhalli	Yes	Yes	No	No	No	No	Yes
Himachal Pradesh	Solan	Solan	Yes	Yes (2)	No	No	Yes (3)	No	Yes
Himachal Pradesh	Solan	Parwanoo	Yes	Yes	No	No	No	No	Yes

Source *CII-FACE Primary Survey 2017*

Table 8.3b Details of assets under e-NAM by sample markets

Assets/Equipment	Rangareddy Vikarabad	Rangareddy Tanduru	Mahboobnagar Badepally	Mahboobnagar Baupally
Computer at the entry gate	No (To be setup/ installed soon)	Yes (2)	No	Yes (2)
Computer at the exit gate	No (To be setup/ installed soon)	Yes (1)	No	No
Computer at the bidding hall	Yes (18)	Yes (7)	Yes (12)	Yes (20)
LAN network	Yes	Yes	Yes	Yes
Multipurpose printers (printer, scanner, & photocopier)	Yes (2)	Yes (3)	Yes	Yes (2)
Thermal printer for gate operations	Yes (4)	Yes (1)	Yes	Yes (2)
Dot Matrix printer for transactional output	Yes (1)	Yes (1)	Yes	No
Wire catridge dot matrix printer/line printer/ laser printer for reports	Yes (1)	Yes (3)	Yes	Yes
Webcams	No	No (To be setup/ installed soon)	No	No
Power Backup Equipment (UPS)	Yes	Yes	Yes	Yes
Power Backup Equipment (Generator/Invertor)	No	Yes	Yes	Yes
Display screen/projector for auction hall	No (To be setup/ installed soon)	No (Exists and installed soon)	Yes	No (To be setup/ installed soon)
Air conditioners	Yes	Yes	Yes	Yes
Broad band/internet connection (leased line of 5-10 mbps speed)	Yes (10 mbps)	Yes (4 mbps)	Yes (10 mbps)	Yes (10 mbps; Act fibre)
Standard equipment for moisture meter, Chemicals and Parameter charts for grading and quality checking etc	Yes	Yes	Yes	Yes (2)
Commodity specific equipment	No	No	No	No
Electronic Weigh Machine	Yes	Yes (5)	Yes (5)	Yes (4)

Assets/Equipment	Hyderabad	Sangareddy	Shimla	Shimla	Solan	Solan
	Malakpeth	Zaheerabad	Dhalli Shimla	Bhattakufar Dhalli	Solan	Parwanoo
Computer at the entry gate	No (To be setup/ installed soon)	Yes	Yes	Yes	Yes	Yes
Computer at the exit gate	No (To be setup/ installed soon)	Yes	Yes	Yes	Yes	Yes
Computer at the bidding hall	Yes (13)	Yes	Yes	Yes	Yes	Yes
LAN network	Yes	Yes	Yes	Yes	Yes	Yes
Multipurpose printers (printer, scanner, & photocopier)	Yes (2)	Yes	Yes	Yes	Yes	Yes
Thermal printer for gate operations	Yes (4)	Yes	Yes	Yes	Yes	Yes
Dot Matrix printer for transactional output	Yes (2)	Yes	Yes	Yes	Yes	Yes
Wire catridge dot matrix printer/line printer/ laser printer for reports	Yes (1)	Yes	Yes	Yes	Yes	Yes
Webcams	No	No	No	No	No	No
Power Backup Equipment (UPS)	Yes	Yes	Yes	Yes	Yes	Yes
Power Backup Equipment (Generator/Invertor)	Yes	Yes	Yes	Yes	Yes	Yes
Display screen/projector for auction hall	Yes	Yes	Yes	No	Yes	No
Air conditioners	Yes	No	No	No	No	No
Broad band/internet connection (leased line of 5-10 mbps speed)	Yes (10 mbps; Act fibre)	Yes	Yes	Yes	Yes	Yes
Standard equipment for moisture meter, Chemicals and Parameter charts for grading and quality checking etc	Yes	Yes	Yes	Yes	Yes	Yes
Commodity specific equipment	No	No	No	No	No	No
Electronic Weigh Machine	Yes (6)	Yes	Yes	Yes	Yes	Yes

Source *CII-FACE Primary Survey 2017*

Commodities traded under e-NAM

As observed during the survey undertaken, pigeon peas, chillies, garlic, tomato, and apples are being traded through e-NAM. Of the total arrivals in the market, part of the volumes is traded on e-NAM and the bulk is being traded through the conventional outcry method. With the apple season ensuing in Himachal Pradesh from early July until October-November, the sample markets are looking forward to bring a significant proportion of the trade under e-NAM.

Table 8.4 Commodities by type, volume and value traded under e-NAM in sample markets

District	Name of APMC/ Subyard	Commodity Trading Details	Commodities	Volume traded under e-NAM in sample markets (In Qtl.)	Value traded under e-NAM in sample markets (In Rs. Lakh)
Rangareddy	Vikarabad	From 01/09/2016 to 06/04/2017	Bengal Gram	25	1.33
			Maize	61525	867
			Green Gram	31	1.5
			Red Gram	3300	164.41
			Soyabeans	501.2	12.74
			Ajwain	42	3.79
			Turmeric	51.8	3.83
			Turmeric Bulb	101.2	7.12
			Turmeric Fingers	87.9	5.87
Rangareddy	Tanduru	From 06/04/2016 to 07/04/2017	Bengal Gram	3506.83	194.81
			Turmeric	90.12	5.86
			Sunflower seeds	4.71	0.12
			Sesame seeds-Black (Gingily)	125.62	5.69
			Lobia	39.54	1.87
			Ground Nut	37310.69	1825.32
			Maize	11813.61	160.11
			Green Gram	15968.64	734.98
			Safflower	469.52	13.48
			Paddy	277777.86	4098.19
			Red Gram	117835.76	5697.18
			Red Gram (Black & White)	3103.59	311.81
			Soya White	45.74	1.08
			Soya Yellow	4546.01	111.69
			Soyabeans	240.43	5.44
			Black Gram	5922.04	413.61
Mahboobnagar	Badepally	From 14/04/2016 to 07/04/2017	Bengal Gram	1	
			Castor Seed	5220.52	
			Ground Nut	55804.87	
			Ragi	388.95	
			Red Gram	34986.51	
			Bajra	67.37	
			Cotton	64346.57	
			Mango Raw	980	
			Ginger (Qtl.)	14.7	
Mahboobnagar	Baupally	From 09/09/2016 to 07/04/2017	Jowar	205.19	2.41

District	Name of APMC/ Subyard	Commodity Trading Details	Commodities	Volume traded under e-NAM in sample markets (In Qtl.)	Value traded under e-NAM in sample markets (In Rs. Lakh)
			Maize	487.39	6.52
			Paddy	15581.41	257.91
			Red Gram	20.77	0.90
			Castor Seed	251.8	8.37
			Ground Nut	44308.9	2001.92
			Ragi	687.74	18.03
			Red Golden Apple	1576.7	77.38
			Tamarind	10.25	0.87
			Tamarind Seeds	6.5	0.11
Hyderabad	Malakpeth	From Sep 2016 to 6/04/2017	Chilly	293182	184.17
Sangareddy	Zaheerabad	From 01/08/2016 to 08/04/2016	Bengal Gram	427.88	22.68
			Jowar	200.50	3.89
			Maize	4948.83	65.27
			Green Gram	562.86	26.12
			Safflower	17.00	0.48
			Paddy	82.00	5.66
			Red Gram	12459.98	593.53
			Soyabeans	4304.86	104.13
			Black Gram	326.09	20.48
Shimla	Dhalli Shimla	From 1/04/2016 to 29/06/2017	Peas	8457.05	304.97
			Cauliflower	11646.61	165.4
			Cabbage	54.52	0.34
			French Bean	1776.72	46.73
			Capsicum	3547.14	236.45
			Apple	4.84	0.16
			Plum	3.25	0.1
			Potato	102.73	1.22
Shimla	Bhattakufar Dhalli	From 1/04/2016 to 29/06/2017	Peas	684.22	23.56
			Cauliflower	63.65	0.7
			Plum	1415.99	81.18
			Almond	94.46	4.51
			Cherry	193.63	19.42
Solan	Solan	From 1/04/2016 to 29/06/2017	Peas	6152.47	140.29
			Apple	8.8	0.19
			Garlic	4292.05	156.09
			Tomato	405.6	9.32
Solan	Parwanoo	From 1/04/2016 to 29/06/2017	Apple	0.06	0.0024

Source *CII-FACE Primary Survey 2017*

Creation of commodity lot IDs

For some of the sample markets in Telangana, commodity lot IDs are created manually at the entry gate and then after the farmer has weighed his produce and undergone a quality check at the commission agent's shop, either the farmer or the commission agent takes the details to the APMC for digital entries and creating the lot IDs. In Himachal Pradesh, the same process is being followed and it is expected that from the coming season, market operations will be more digitally driven than before. Initially, markets have been facing a challenge during peak season when the number of farmers and trucks/tempos coming to the market are huge and it is important to ensure that there is a fast movement.

Assaying laboratories and services

In Telangana, it was observed that assaying laboratories were being set up under the technical supervision of NCML and the trained manpower were being provided by them for a specified time period. In Himachal Pradesh, the same is being set up under the technical guidance of Directorate of Marketing and Inspections (DMI), Government of India. The status of assaying laboratories and services provided by the markets are summarized in (Table 8.5).

Table 8.5 Status of assaying laboratories and services provided

State	District	APMC market yard/sub yard	Assaying Lab Available	Functional (Yes/No)	No. of Staff Available
Telangana	Rangareddy	Vikarabad	No		4
Telangana	Rangareddy	Tanduru	No		4
Telangana	Mahboobnagar	Badepally	Yes	Yes	4
Telangana	Mahboobnagar	Baupally	Yes	Yes	4
Telangana	Hyderabad	Malakpeth	Yes	Yes	4
Telangana	Sangareddy	Zaheerabad	No		4
Himachal Pradesh	Shimla	Dhalli Shimla	Yes	Yes	4
Himachal Pradesh	Shimla	Bhattakufar Dhalli	No		
Himachal Pradesh	Solan	Solan	Yes	Yes	4
Himachal Pradesh	Solan	Parwanoo	No		

Source *CII-FACE Primary Survey 2017*

Bidding methods under e-NAM

Given the hurdle of switching to e-bidding completely owing to infrastructure, understanding and ability to use technology, APMCs are allowing e-trading of part of the total arrivals in the market in order to incentivize traders and farmers to experiment and then make a gradual shift towards complete e-bidding.

It was observed in Himachal Pradesh that under e-NAM, three bidding options were available; i) e-bidding; ii) outcry method and iii) one-to-one sale (i.e. direct sale between farmer and traded without the engagement of the commission agent). All transactions under these three options are digitally recorded and payments done through the e-NAM payment gateway. Table 8.6 summarizes the total number of bids creates since e-NAM has been functional in the sample markets.

Table 8.6 Number of bids created in the sample markets till date

State	District	APMC market yard/sub yard	Number of bids created in the sample markets till date	Sale Summary Report Between Period
Telangana	Rangareddy	Vikarabad	67	03-04-2017
Telangana	Rangareddy	Tanduru	321	06-04-2017
Telangana	Mahboobnagar	Badepally	41460	14/04/2016 to 7/04/2017
Telangana	Mahboobnagar	Baupally	26107	9/09/2016 to 7/04/2017
Telangana	Hyderabad	Malakpeth		
Telangana	Sangareddy	Zaheerabad	3795	01/08/2016 to 8/04/2017
Himachal Pradesh	Shimla	Dhalli Shimla		
Himachal Pradesh	Shimla	Bhattakufar Dhalli		
Himachal Pradesh	Solan	Solan		
Himachal Pradesh	Solan	Parwanoo		

Source *CII-FACE Primary Survey 2017*

Bid creation practices in sample markets

As observed in Telangana, existing traders make a physical inspection of the quality of produce available in the market and then bid digitally through their smart phones, laptops, or computers later in the day when the bidding starts. These traders do not assemble at the bidding hall or APMC office. While in Himachal Pradesh, traders and commission agents assemble in the e-auction hall and call out the prices against the quality available which are then digitally recorded by the data and mandi analysts. The bidding time is limited to few minutes unlike in Telangana where the bidding continues for a couple of hours before it is timed out.

Since inter mandi trading is yet to take off, with the same set of traders bidding, the number of bids per lot of a commodity can go as low as one, which does not always ensure competitive price to the farmer. The current bidding practices are not in line with e-trading as envisaged and the way prices are being determined is not too different from that done in open auction. The farmer has the right to refuse to sell his commodity if he does not find the price satisfactory and put it up for sale the next day or later. In this case, he puts up a bid cancellation request which is then taken through by the APMC.

In the e-bidding process, APMC offers the first bid to set the floor price determined from prices in the past few days and also tentative market demand and supply. Thereon the bidding is opened to traders for a stipulated time period. With respect to e-bidding, the farmers are apprehensive about the price formation process. As observed from some interactions with the farmers in Telangana, they felt that open auction resulted in higher price realization and they could see it for themselves who was bidding what price. In the current process, they are sceptical about the process of price discovery, which is a matter of creating greater awareness and educating the farmers about the process.

e-payments process

In both Telangana and Himachal Pradesh, it was reported that as a result of demonetization, e-payments had picked up in the markets wherein commission agents paid the farmers on the same day through cheques, RTGS and NEFT transfers. In the sample markets in Telangana, commission agents made the payment to the farmers before they received the payments from the purchaser-trader. There is usually a difference between the payment voucher generated under e-NAM and the final payment made to the farmer owing to deductions made against advances given by the commission agents to the farmers. While not reported in Telangana, it was observed that in Himachal Pradesh, the payments were being made by the trader (who is the commission agent in the case of vegetables and in some cases in fruits) to the farmers on the same day through the e-NAM payment gateway. A maximum period of 48 hours is taken for the payment to be credited to the farmer account; 1 per cent market fees to the APMC and 5 percent commission fees in case he is a different entity. The e-NAM payment gateway is with ICICI bank which charges a user fee of upto 2.5 per cent depending on the value of transaction. ICICI Bank will enable BHIM (Bharat Interface for Money) and Unified Payments Interface (UPI) on the e-NAM portal for making cashless payments.

Role of market intermediation under e-NAM

Commission agents still remain a stronghold in the market given that he remains the first point of contact for the farmer. The farmer brings his produce to the commission agent who is responsible for weighing, facilitating physical assaying by the traders and then providing the details to the mandi analyst for digital entry, as observed in both Telangana and Himachal Pradesh. The commission agent continues to provide farmers loans for

crops and other purposes, he takes the risk of making payment to the farmer on the same day (in cash, cheque, bank transfer as feasible) before the trader makes the payment to the commission agent as observed in the case of Telangana. He also holds on to the produce brought in by the farmer for days before it is put up for bidding both in Telangana and Himachal Pradesh. With introduction of e-NAM, there are some early apprehensions in the minds of the commission agents and they see this step to downsize their role and eventual remove it from market transactions. While there is no role of intermediation in market operations that are digitally driven and administrator and facilitator present in the form of APMC, it will be some more time before one sees the commission agents converting into purchaser-trader (as already is the case in vegetables in Himachal Pradesh) and the dependency of farmers going down over time.

Skilled manpower available for e-NAM

Given the scope of activities under e-NAM as observed in the sample markets, the manpower made available for functioning of e-NAM is quite inadequate. There is need for skilled manpower to ensure that the process is followed in a fool-proof manner and any glitches are immediately identified and addressed thereon. Table 8.7 summarizes the number of staff employed at the sample mandis under e-NAM.

Table 8.7 Staff employed under e-NAM in sample markets

State	District	APMC market yard/sub yard	APMC Staff	E-NAM Staff	Total
Telangana	Rangareddy	Vikarabad	NA	4	4
Telangana	Rangareddy	Tanduru	NA	3	3
Telangana	Mahboobnagar	Badepally	13	3	16
Telangana	Mahboobnagar	Baupally	8	4	12
Telangana	Hyderabad	Malakpeth	36	3	39
Telangana	Sangareddy	Zaheerabad	5	6	11
Himachal Pradesh	Shimla	Dhalli Shimla	34	14	48
Himachal Pradesh	Shimla	Bhattakufar Dhalli	NA	NA	0
Himachal Pradesh	Solan	Solan	24	10	34
Himachal Pradesh	Solan	Parwanoo	NA	NA	NA

Source *CII-FACE Primary Survey 2017*

8.3 Key elements for successful implementation of e-NAM

According to what was observed on the ground and the original design of the e-NAM model, following maybe considered critical elements which need to be streamlined and strengthened over time for achieving the desired impact:

1. Actual identification of farmer-seller and his/her registration under e-NAM to ensure that the benefits are transferred to him/her directly without any type of intermediation.
2. Assaying as per technical guidelines laid down by a competent agency and an institution certifying the credibility and authenticity of the assaying certificate to enable inter market and inter-state trading, going forward.
3. Bidding to be conducted digitally with the use of smart phones, laptops, and computers so that there is no potential collusion and price is determined by the demand and quality of the produce.
4. Setting a minimum number of bid criteria to ensure that the price determined through bidding is competitive and not a result of a single or two bids.
5. All payments to be done through the e-NAM gateway and not just e payments such as RTGS and NEFT transactions to ensure that farmers receive the price discovered through the e-bidding and is not charged anything extra or paid less for reasons which are not governed by the markets.
6. Payments should be made to individual farmers irrespective of whether they have physically come to the market to sell their produce or sent it through fellow farmers, village level aggregator or transporter.
7. For farmers to benefit from higher price discovery, it is imperative for states enrolled under e-NAM to provide a single unified license for the traders so that they can trade in any market within the state and then eventually in the country.
8. The role of commission agents and their dual role as purchaser trader (in certain cases) need to be looked at. Considering the key objective of NAM of creating a single market and connecting farmers directly with buyer-traders, mandatory intermediation should be removed. Farmers should be given a choice to trade through a commission agent or not depending upon his circumstances and all assistance in terms of market and price information, prospective buyer-traders, etc should be enabled by the APMC.
9. Since most of the states require commission fees to be charged to the purchaser-trader and not the farmer, the legitimacy of charging anywhere between 4-8 per cent need to be looked at and the rates should be rationalized. This will have a positive impact on the end wholesale price and hence retail prices and benefit consumers in terms of competitive prices.
10. The achievements and progress made by the APMCs in enrolling stakeholders under e-NAM and the daily turnover valued in terms of e-payments should be closely monitored by an independent agency other than the implementing agency, strategic partner and/or Government offices. The net outcomes should be measured in terms of actual number of farmers who have received payment through the e-NAM payment gateway, turnover of commodities traded to e-NAM portal against the total arrivals in the markets and its trend over time. Given the amount of public spending involved in the roll out of NAM, it is important to get it right and adopt a yardstick to measure success, identify bottlenecks in order to address the issues.

8.4 Other suggested reforms indirectly related to agricultural marketing

Improve market density

NAM is about creating a single unified market and the proposed APLM Act talks about broad basing the definition of markets to include warehouse, cold stores, packaging and processing units. Both these combined, have the potential to improve farmers' access to markets significantly as well as save him from distress sale and benefit from higher price realization when the demand is strong. This will also increase the number of markets per square km. Currently, regularised market is available at every 462 sq km, but as per the recommendations of National Commission, a regulated market should be available to farmers within a radius of 5 Km. This will benefit farmers in terms of savings on transportation costs, the hassle of leaving his farm and coming to distant markets himself or depend upon others for selling his produce. As observed in the case of Himachal Pradesh, APMC, Shimla covers both Shimla and Kinnaur and apples growers from Kinnaur come all the way to Shimla, and down to Solan to sell their apples entailing huge time and money. With markets closer to Kinnaur that include cold stores, farmers can sell their produce closer to their orchards following which traders can directly transport to the markets they desire.

Promote direct sale to the purchaser-trader

Currently, farmers depend on commission agents for the sale of their produce, primarily because of buyback and payment security. However, this is not the best option for the farmers as they often compromise on the price received owing to outstanding loans, cash payments, buyback and holding guarantee at the risk of the commission agents. The farmers are most of the times forced to depend on the commission agents as they don't know the purchaser – trader and there is no guarantee that he will be able to sell his entire produce to a single trader and that he will get paid. As observed in Himachal Pradesh, all vegetable traders are commission agents themselves and there are very few traders who come from outside the state and are not registered with the APMC. In the case of fruits and particularly apples, the value of transactions is so high running into a few crores, the risks of trading directly with the trader are high. Hence it is imperative to register all traders in line with the single license criteria to be met by all states enrolled under e-NAM which will ensure that these are genuine buyers and in case of any crisis or fraud, they can be traced. However, this does not need to be linked with the criteria of having an own shop with the APMC market yard or sub yard. Instead, beginning of each trading season, the trader can be asked to deposit a guarantee money against which the trade can take place. Also, the option of vehicles not allowed to leave the market premises without the payments being processed can help ensure that farmer receives his/her payment.

Provide marketing risk insurance

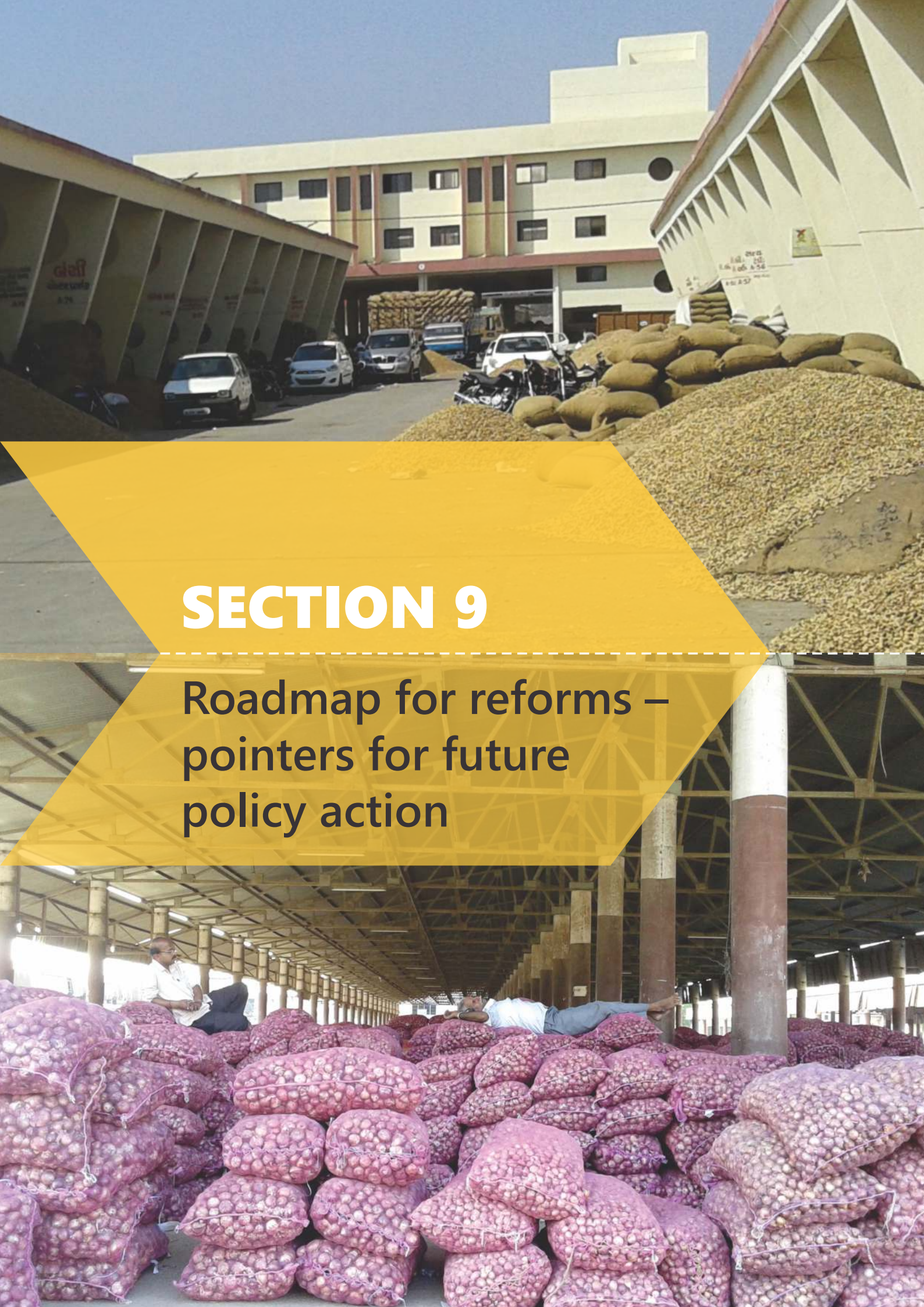
In the case of any loss of produce due to theft, accident, etc, farmers should be extended a market risk insurance to ensure his/her income security. A robust mechanism of making such schemes available to the farmers for an affordable premium can help them reduce their dependence on other market functionaries and improve his/her price margins.

Promote FPOs for aggregation of farmers

To ensure effective market linkages, farmers should be encouraged to form FPOs such that they can equip themselves better to participate under e-NAM. Activities related to sorting, grading, assaying and packaging can be undertaken at the FPO level through a prescribed and certified method. This will be useful in avoiding unloading, unpacking and again packing and loading of produce which is time consuming and entails losses. Also, the probability of individual farmers packing mixed quality produce will be less given that they will be accountable for building their own credibility and brand for better prices. FPO will also enable farmers cover risks associated with farming, harvesting, storage and marketing.

8.5 Conclusion

Moving towards a single unified agricultural market is a right step in the direction of market liberalization. Leveraging technology to connect all agricultural markets and deliver fair and remunerative prices to the farmers as well as ensure seamless availability of commodities is a huge task in hand. So far, the design and implementation of NAM attempts to address the existing inefficiencies in market operation and streamlining the same to ensure that farmers benefit from fair price for their produce and there is greater transparency in transactions. Given it is still at its early stage of implementation, markets which have already enrolled are in the process of setting up infrastructure, making services available and most importantly, bringing farmers, traders and commission agents on board to gradually make a complete shift towards e-NAM. APMCs are strategically encouraging traders/commission agents and farmers to bring part of the transactions under e-NAM rather than impose e-trading on them and also allay their fears and apprehensions with the system moving towards greater transparency. Transactions under e-NAM are taking place and the number of stakeholders getting registered, volumes and value of commodities transaction are increasing which is good progress. However, counting numbers is not enough and there is greater need to monitor progress at each market level and understand the local challenges and measures that need to be taken to address the same. Issues related how farmers are getting benefitted, how market operations are getting streamlined, how transparency is benefiting stakeholders with fair price discovery, standardized assaying, e-payment, etc need to be looked at very closely. Currently, the sample study shows that in most of the cases, things are just taking off and lot of the market operations are taking place manually or at least not as exactly designed and then subsequently digitized. Considering the importance of fair price discovery under e-NAM, it is absolutely important to monitor how the process is being followed in the markets and take measures immediately to ensure that corrections are made and the process is on track. Going forward, NAM will have to attract more and more farmers on the bidding platform and it does not require them coming to the physical markets themselves. Right now, they are still dependent on the traders and commission agents. Although most of them are aware of prevailing prices and have the right to refuse sale if they are not satisfied with the prices, farmers need to participate more actively and reduce their dependence on market intermediaries. Also, payments should be made to each and every individual farmer whose commodities are sold in the market and not to a representative unless it is a FPO or authorized farmer group. The essence of NAM lies in leveraging technology in delivering benefits to the farmers and hence reduce human interface. The last mile connectivity through the virtual platform will ensure that NAM delivers on its objectives.



SECTION 9

Roadmap for reforms – pointers for future policy action

Measures to bring about an efficient marketing system in agriculture encompass reforms in a wide spectrum of areas which strictly do not confine themselves to "marketing reforms". As the study suggests, institutional reforms, infrastructural reforms, operational issues, issues related to governance and ease of doing business for both the buyer and the seller (particularly the farmers) need to be addressed simultaneously, to bring about the desired changes.The existence of extensive market intermediation is clearly a result of missing or non functional institutions which have gained a strong foothold in marketing operations. Without providing an alternative that is better and efficient than the current practices and offers to lend greater security against any kind of risks associated with farming, harvesting, storage and marketing, it will be difficult to convince the farmers to adopt new methods and practices. Some of the key issues directly or indirectly related to marketing that need to be addressed through policy and institutional reforms are summarized as follows:

9.1 Strengthen formal credit and insurance mechanisms

Small and marginal farmers and landless peasants are vulnerable to credit shocks and their inability to access formal credit has given roots to a large informal credit market and rent seeking practices. About 64 per cent of the outstanding debt of cultivator household is from institutional sources while the remaining 36 per cent is from non-institutional sources (estimates for 2013 according to All India Debt and Investment Survey, NSSO). Access to formal credit and insurance schemes to mitigate risks against price and income failures need to be strengthened. While there is provision under Priority Sector Lending to create a robust credit arrangement mechanism in agriculture, it is important to undertake and ensure last mile delivery to the farmers. Benefits of flagships schemes like the Pradhan Mantri Fasal Bima Yojana (PMFBY) should reach all the farmers including the marginal and small through universal registration. Making formal credit more accessible and affordable to the farmers through Kisan Credit Cards (KCC) and/or farmer self-help groups will be critical to prevent them from taking credit from informal sources at exorbitant rates

Within the purview of this study, it was found that most of the traders and commission agents claimed that the primary reason for farmers coming to the mandi was because of their credit needs. The interest rate at which such loans are available is not clearly known but nevertheless are exorbitant.

Access to formal credit and insurance schemes to mitigate risks need to be strengthened. While there is provision under Priority Sector Lending to create a robust credit arrangement mechanism in agriculture, it is important to undertake and ensure last mile delivery to the farmers.

9.2 Strengthening of institutional mechanisms for success of contract farming

One of the focus areas of marketing reforms has been establishing backward linkages with farmers through various models such as contract farming, direct marketing, farmer producer organizations, cooperatives etc. Experience of contract farming in India has been a mixed bag and has been observed to be successful under specific circumstances. Value chains that cater to export of fruits and vegetables have

thrived under contract farming as these require specific quality and variety of fresh produce which require working directly with the farmers. Poultry and dairy are examples of successful farm-firm linkages wherein farmers have benefited from assured buyback and price guarantee while buyers have benefited from assured supply of quality produce. The economies of scale do not always work out for the front-end buyer to tie up with the farmers directly, particularly in the case of vegetables and those which are easily sourced from mandis. To secure farmers against income and price risks, it is important to strengthen institutional arrangements that encourage backward linkages in terms of access to quality inputs, agri services, and guarantee buyback and price offered. Increasingly, demand for high value, quality and safe food will require front end players directly sourcing from farms that are certified and practices that conform to global standards and contract farming as an institution can be instrumental is ensuring successful farm-firm linkages.

Delayed payment for crop produce, lack of credit for crop production, erratic power supply and difficulty in meeting quality requirements have been found to be the major constraints faced by contract farmers. Whereas, contracting agencies have cited violation of terms and conditions by farmers, lack of proper management, frequent price fluctuations in international markets and scarcity of transport vehicles during peak periods etc. as impediments to contract farming. The Central Government launched the Agricultural Produce & Livestock Contract Farming and Services (Promotion and Facilitation) Act, 2018 in May 2018, showing clear focus towards promoting contract farming. However, despite the correct intent, the Act remains more of a regulating Act, rather than a promoting and facilitating one, which is the need of the hour.

The Act mentions creation of a multitier regulating structure, which will have an ab-initio involvement of multiple parties in what is essentially a two-party contract. This is bound to be time consuming and will hinder "ease of doing contract farming".

At the premise, the Act assumes the farmers to be the weaker party and thus is skewed against the sponsor. Clauses such as guaranteed buy-back, mandatory insurance, lack of provision for recovery of loans and advances in case of default by the producer, etc. are likely discourage contracting parties/companies to enter into a contract farming arrangement. The key issues of the ACT are mentioned in Box 9.1.

Box 9.1: Key Issues of the Model Contract Farming Act

	Key issues
Pricing: Currently the contract farming price is agreed mutually between the farmers and the sponsors. This is based on market price, subsidized inputs, extra efforts required by the farmers etc. However, Section 24 and 25 of the Act empowers the authority to provide guiding criteria for determining sale-purchase price.	**Insurance of produce:** The Act mandates that product under contract must be insured. Given the high price of farming insurance policy and the poor coverage, this will only add to the cost of the contract farming. The sponsor actually puts extra effort and money on crop protection which is why losses are minimised and thus he will have to face a dual cost. In our view, this will deter most from entering into contract farming.
	Buy Back: Under the buyback conditions proposed in Section 27(2) of the Act, the sponsor has to purchase the entire contracted amount from the producer, even if the produce doesn't meet the pre-agreed quality, albeit at a lower price. Sponsors enter into contract farming seeking a better quality/ specification and not for average quality produce, which can be easily purchased from the market.

9.3 Abolish controls through ECA to avoid black marketing and sudden spiralling of prices

Progressive dismantling of controls and regulations under the Essential Commodities Act to remove all restrictions on storage and movement and trade of all agricultural commodities is deemed essential to ensure smooth supply and curb inflationary pressures. Restrictive provisions of the Essential Commodities Act (ECA) and a host of control orders broadly related to licensing of dealers, regulation of stock limits, restrictions on movement of goods and compulsory purchase under the system of levy have not worked well in the interest of free market operations. The ECA has now outlived its purpose and there is an urgent need to review the rationale for these archaic control orders and regulations. Although the Essential Commodities Act has been amended and the number of commodities under this Act has been brought down to 7 from 70, restrictions on the movement of goods under the Essential Commodities Act (ECA) remain in place in various states, inhibiting free access of agricultural markets. Regulatory barriers have inhibited investments in development of storage and processing facilities, direct marketing, hampered the development of effective institutions, and suppressed the capacity of agricultural producers to be internationally competitive.

The regulatory framework of the ECA which adversely impacts quick response to demand supply imbalance and impedes private sector participation, needs to be abolished completely. Further, ECA needs to clearly distinguish between black marketers / hoarders and genuine service providers to encourage investment and preserve the interest of the farmers.

9.4 Integrating Spot and Derivative Markets

Commodity options to manage the price risk inherent in agriculture had been a long-pending demand. Since commodity derivatives were brought under the Securities and Exchange Board of India (SEBI), there has been some progress. In January 2018, the National Commodity and Derivatives Exchange Limited (NCDEX) launched the country's first agri-commodity options in Guar Seed, on a pilot basis. Going forward, more mainstream commodities need to be added.

Simultaneously, efforts must be made to integrate the spot and derivative markets in a manner such that both serve their respective purposes while reinforcing each other. Spot markets enable discovery of relevant customers for every quality of a product while managing value. On the other hand, derivative markets facilitate price discovery and risk management for standardised products. It is important to educate the spot market participants on the basis of risk involved, when derivative markets are used to hedge the price risk. It is also important for the market participants to learn how futures and options can be embedded in the bilateral spot market transactions, so that the price risk can be off-loaded to the larger marketplace. Otherwise, it remains a zero-sum game between a buyer and a seller. This is also the best way to make contract farming work, because both the farmer and the sponsor hedge, making use of the futures or options, and neither of them gain by reneging on the contracts when the prices go up or down.

9.5 Leverage technology for improving market efficiency

There is considerable scope for leveraging technology to streamline operations as well as improve efficiency in agricultural marketing in the run up to the creation of NAM.

Although there is a shift from cash transactions to electronic transfers, payment settlements are still widely done in cash. Under such circumstances, it is impossible to account for the actual value of transactions. With the increasing access to formal banking system and easy reach through mobile technology, all payment settlements need to be made electronically. Hand written challans and receipts should be replaced with electronic receipts. There should be option for online payments for those who have access to such online services.

Technology driven auction and monitoring auctions should be done through e-platforms or at least it is required to digitize the auctions so that the process is recorded. Moving to technology driven auctioning and monitoring various activities within the market will allow greater transparency and weed out a lot of malpractices and rent seeking activities. This will eventually result in improved price discovery for the seller, and revenue generation for the market authorities.

Monitor entry & exit of vehicles coming into the mandi while there is a provision of challans for entry of vehicles into the market premises, there is no monitoring to track the number of vehicles or capacity. This can be done seamlessly with the use of technology by scanning all the vehicles entering and exiting the market.

Availability of market based information in a structured format necessary - create a centralized data bank despite the existence of a few public websites at the central and state level, information related to agriculture marketing is not available in a structured format and in most of the cases not updated. Information regarding the number of markets, their classification (in terms of availability of infrastructure, turnover, etc.) which is critical to assess the bandwidth,is not available. Further, revenue and expenditure statements of markets, utilization of financial resources on market development, is not easily accessible. Like for several other sectors within and beyond agriculture, creation of a centralized database with real time information needs to be created to ensure that information is available for informed policymaking.

9.6 Rationalization of fees & taxes

There are a plethora of fees and taxes involved in agricultural marketing which is either indirectly borne by the farmers in terms of lower net price realization or the consumers in terms of higher prices. With the introduction of Goods and Service Tax (GST) in general and NAM in particular, a lot of these fees and taxes will be rationalized to the benefit of the agricultural sector. It is observed from the tomato value chain analysis that transportation accounts for a major share of the cost of production which to a large extent could be rationalized through implementation of uniform taxes under GST.

However, fees and taxes specific to agricultural market that continue to exists and needs further rationalization to ensure prices are competitive at both ends, particularly in terms of the following:

- remove of dual market fees charged by most states in case of the same commodity bought and sold in different states.
- implement uniform market fee across states
- reduce commission fee from current levels of (5-11 per cent). It has been proposed by the APLM Act to restrict commission fees to 2 per cent in the

case of non-perishables and 4 per cent in the case of perishables. With the introduction of NAM, gradually phase out intermediation and any fees associated with it.

- check double charging of commission fees from farmers and buyers (observed in several cases during the mandi survey) which is extremely difficult to identify given the transactions that take place between commission agents and farmers outside the control of the APMC.
- improve awareness among farmers/ small traders on the nature of fees & taxes paid and make available a robust redressal system to address these issues promptly.

9.7 Strengthening e-NAM

Moving towards a single unified agricultural market is a right step in the direction of market liberalization. Leveraging technology to connect all agricultural markets and deliver fair and remunerative prices to the farmers as well as ensure seamless availability of commodities is a huge task in hand. So far, the design and implementation of NAM attempts to address the existing inefficiencies in market operation and streamlining the same to ensure that farmers benefit from fair price for their produce and there is greater transparency in transactions.

Given it is still at its early stage of implementation, markets which have already enrolled are in the process of setting up infrastructure, making services available and most importantly, bringing farmers, traders and commission agents on board to gradually make a complete shift towards e-NAM. Transactions under e-NAM are taking place and the number of stakeholders getting registered, volumes and value of commodities transaction are increasing which is good progress. However, counting numbers is not enough and there is greater need to monitor progress at each market level and understand the local challenges and measures that need to be taken to address the same through the following measures:

Robust monitoring and evaluation process

Important performance indicators like how farmers are getting benefitted, how market operations are getting streamlined, how transparency is benefiting stakeholders with fair price discovery, standardized assaying, e-payment, etc need to be monitored regularly. Viability of extending e-trading across commodities and markets need to be assessed based on the implementation progress of NAM. There should be specific targets against timelines and deviations need to be reviewed and outcomes recalibrated accordingly. Simply counting number of market enrolled and stakeholders registered and value of transactions recorded under e-NAM will not be enough to gauge if the progress is on track. Market specific results against targets and progress in addressing issues that impact operations need to be evaluated for achieving the true success of NAM.

System strengthening through technology intervention

Considering the importance of fair price discovery under e-NAM, it is absolutely important to adopt a clear roadmap towards ensuring that all commodities are e-traded and related payments are made through the e-NAM gateway directly to the beneficiary accounts. Mere digitising market transaction records and continuing with partial transactions through e-NAM need to be overcome through a targeted approach. Technology made available through e-NAM needs to be leveraged and eventually extended to the APMC functioning as well in addition to collection of market fees extending to payments made to various functionaries, expenditure on market development and other activities.

Abolish any form of market intermediation

Going forward, NAM will have to attract more and more farmers and traders on the e-bidding platform and it does not require them coming to the physical markets themselves. Through single license, traders can connect directly with farmers irrespective of the states they belong to, further a mechanism to ensure that these are credible traders and not fly by night operators needs to be put in place and do away with the selection criteria of awarding licenses such as owning a shop with APMC premises, etc. Similar to an Aadhar card or PAN card, traders can be tracked from anywhere in the system. This will reduce the dependency of the farmers on the commission agents for buyback and payment guarantee. With NAM, commission agents can adopt the role of traders as they are already doing in certain states and with better market network can increase the volume of business they are currently engaged in.

In this context, the Union Budget (2018-19) announcement of ungrading 22,000 rural haat into grameen agriculture markets (GrAMs) is a welcome step. Further, going forward these GrAMs are planned to be linked to the e-NAM portal, thus extending the net of market coverage.

Creating awareness and capacity building of market stakeholders

A lot of focus is given on creating awareness and conducting capacity building programs for the farmers, traders, commission agents as well as APMC functionaries to ensure that the concept of NAM and the technology components are well understood and adopted by all. Continuous efforts need to be made to allay fears and apprehensions of such a mammoth technology intervention and demonstrate the success and impact wherever observed. Sharing of best practices at the market and state level need to be encouraging and incentivising states to adopt this model.

The idea of reforms is not to do away with mandis or the functionaries but to encourage competition (and render collusion, cartelization ineffective) and allow market forces (to a large extent) to determine the future of agriculture marketing, going forward. Agricultural marketing is a critical component of enabling farmers to secure their income and livelihoods and hence boosting market efficiency through policy and institutional reforms have a direct impact on the larger vision of doubling farmers' income.

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Confederation of Indian Industry

The Confederation of Indian Industry (CII) works to create and sustain an environment conducive to the development of India, partnering industry, Government, and civil society, through advisory and consultative processes.

CII is a non-government, not-for-profit, industry-led and industry-managed organization, playing a proactive role in India's development process. Founded in 1895, India's premier business association has around 9000 members, from the private as well as public sectors, including SMEs and MNCs, and an indirect membership of over 300,000 enterprises from around 265 national and regional sectoral industry bodies.

CII charts change by working closely with Government on policy issues, interfacing with thought leaders, and enhancing efficiency, competitiveness and business opportunities for industry through a range of specialized services and strategic global linkages. It also provides a platform for consensus-building and networking on key issues.

Extending its agenda beyond business, CII assists industry to identify and execute corporate citizenship programmes. Partnerships with civil society organizations carry forward corporate initiatives for integrated and inclusive development across diverse domains including affirmative action, healthcare, education, livelihood, diversity management, skill development, empowerment of women, and water, to name a few.

As a developmental institution working towards India's overall growth with a special focus on India@75 in 2022, the CII theme for 2018-19, **India RISE : Responsible. Inclusive. Sustainable. Entrepreneurial** emphasizes Industry's role in partnering Government to accelerate India's growth and development. The focus will be on key enablers such as job creation; skill development; financing growth; promoting next gen manufacturing; sustainability; corporate social responsibility and governance and transparency.

With 65 offices, including 9 Centres of Excellence, in India, and 11 overseas offices in Australia, Bahrain, China, Egypt, France, Germany, Iran, Singapore, South Africa, UK, and USA, as well as institutional partnerships with 355 counterpart organizations in 126 countries, CII serves as a reference point for Indian industry and the international business community.

FACE
CII-Jubilant Bhartia
Food and Agriculture Centre of Excellence

Accounting for 14.5 per cent of gross domestic product (GDP) in 2010-11 and engaging nearly 58 per cent of the workforce (in 2001), Indian agriculture continues to be the mainstay of the economy and critical to food security and inclusive growth. Agricultural growth has been quite volatile and for the last five years (2007-08 to 2011-12), it grew at an average rate of 3.3 per cent, against a targeted growth of 4 per cent. There is enough reason to be optimistic about the sector. India witnessed record production of 257.4 million tonnes of food grain in 2011-12, emerged as a net exporter of cereals during most of 1990s until 2011-12. Production of high value commodities have grown manifold over the years.

However there are challenges such as land fragmentation, small holdings (average size being 1.06 hectares (in 2003-04) which dampen the scope for economies of scale. Current practices of imbalanced used of fertilizers, over-depletion of groundwater and slow pace of diversification are indicative of a heavily subsidy driven approach which need to be rationalized. Increasing investments in agriculture, with the private sector leading can provide the right impetus to further accelerate growth.

CII has set up a Food and Agriculture Centre of Excellence (FACE) to contribute to the ongoing policy dialogue related to agriculture and food-security concerns. The Centre through its integrated approach of action oriented programs and capacity building will address the issues from the farm gate to the consumer end.

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