

## E-Marketing of Agriculture Commodities: Challenges and Prospects for Marginal and Small Farmers in India

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## Abstract

The existing agricultural market system borne operational inefficiency and is challenged with several problems which marginal and small farmers face. Due to a lack of infrastructure, storage capacity, connectivity, and alternatives to sell produce at a fair price, the government of India tried to connect farmers across the country through an electronic platform i.e. E-NAM in 2016. Prior to the government intervention in the electronic-platform domain, several Private initiatives have been taken through a business model such as ITCe-choupal, Ninjacart, and a few others. The electronic trading platform is an attempt to transform the market system. Rural producers need to connect with consumers and traders. The paper is based on two research questions: a) what is the state of e-marketing in India and Odisha and grey area if any?; b) What are the challenges and prospects of e-marketing in agriculture faced by marginal and small farmers? The paper has adopted a descriptive approach by reviewing the existing literatures, secondary reports, policy documents, and case studies. It was found that strengthening the institutional governance, bring innovation, and adopting risk among the farmers are the key important bases for the success of the institutions. It was also observed that lack of participation and awareness among the farmers, and lack of extension remains a bottleneck for the success of marketing institutions. The existence of E-NAM is at a nascent stage and it needs strong stakeholder support to function effectively.

**Keywords:** E-Marketing; Agriculture commodities; E-NAM; Enterprise; Business model.

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## 1. Introduction

Connectivity and access to market especially among marginal and small farmers has been a matter of concern. Agricultural market, be it rural *haat*, regulated market, terminal market, and farm gate delivery has an important role to play in giving a fair price to rural producers, mostly marginal and small producers. Marginal and small farmers who have lesser quantity or no surplus to sell always depend upon local market to sell or purchase their commodities directly.

Over the time, it is observed that marginal and small farmers faces challenges due to bottlenecks in marketing institutions as well as due to their economic and social conditions. To counter the challenges, various institutional linkages were brought in to the market system through enactment of Agricultural Produce Marketing Committee (APMC) Act in 2003, Agricultural Produce & Livestock Market Committee (APLM) Act 2017, model Contract Farming act 2018, Farmer Producers Organization Act 2002 and electronic-National Agriculture Market (e-NAM) in 2016. Market is no longer defined by physical space but also virtual platforms where producers and buyers get connected through electronic and digital devices. In this context, awareness, connectivity and accessibility are found to be important for trading. Marginal and small farmers, who are very often forced to distress sell, are reported to be far behind to connect themselves to such innovation in marketing system.

Despite all initiatives, programs, enterprise and business model, the marginal and small farmers could not leverage the benefit and eventually plagued with market inefficiency, high cartelization charges, mediation charges, bureaucratic control, less access and connectivity, infrastructure support, poor post-harvest management. The present paper has attempted to answer the following research questions: a) what is the state of e-marketing in India in general and Odisha in particular and grey area if any?; b) What are the challenges and prospects of e-marketing in agriculture faced by marginal and small farmers?

## 2. Literature Review

Both the production process and the marketing mechanism mutually deliver the best. Dev [1] observed that to increase the income significantly, backward and forward linkage has an important role. Marginal and small farmers face new challenges within the existing and changing institutional reforms & police [2]. The structural reforms in agricultural marketing with the emerging features are insufficient to cater to the challenges faced by marginal and small farmers.

The production and marketing of agricultural products are inextricably linked. The marketing of agricultural products has long been a practise. From barter to money in the village local market until now, many marketing strategies have been used in the economy, including ICT, digital marketing, collaborative marketing, and virtual platforms that operate globally. Due to the fact that goods are currently produced in one spot and consumed year-round in other locations, agriculture marketing has changed. In this way, agricultural marketing is essential for both consumers and farmers to gain a greater price along the entire supply chain.

Agricultural marketing is a tool for carrying out activities efficiently so that farmers can sell their excess produce and increase their profit from consumer share. National Commission on Agriculture [3] found that agricultural marketing includes all activities related to the transfer and choice to sell farm products from producers to consumers, as well as the sudden realisation of an economic advantage. Additionally, a number of tasks related to marketing institutions have been completed, including gathering, sorting, processing, preserving, transporting, and funding. The primary sector's output is used as inputs by the processing industry and the service sector. Numerous initiatives have been done for efficient marketing operations, and academics feel that these initiatives may improve the marketing system. However, there are several flaws in the current agricultural market that a marginal and small farmer must deal with. Agricultural marketing's operation and performance in the supply chain network show its extreme inefficiency, large scattering costs, and low consumer price share.

As a result, it was discovered that agricultural marketing is more effective when there is no middleman involved. It was also noted that the government's initiative to safeguard farmer interests through institutional innovation, such as cooperative marketing, Producer Company, self-help groups, farmer service societies, and farmer clubs, is commendable. Political interference [4], the inefficiency of the regulated market under the APLM Act, 2017, which replaced the APMC Act, 2003, manipulative discovered prices, and cartelization [4, 5] are obstacles that prevent smallholders from increasing their income, amplifying their political voice, absorbing price risk, and lowering their marketing costs.

Access to market information is crucial for the farmers to make on time right decisions about what to grow, when to harvest, whether to store it or not and which market to send. According to Raj [6] awareness of farmers on different components of market information and its utility is very poor unlike that of traders. The coverage of smart phone has significantly improved the efficiency of the market and enabled fisherman in increasing their profit by nine per cent and decreasing consumer price by four per cent. Fafchamps and Minten [7]; Jensen [8]. Jairath and Yadav [9] reveal that direct marketing of the agricultural produce is the need of the hour without mediator involvement but they realize a higher share. Bisen and Kumar [10] expressed that the e-marketing model brought by joint venture in Karnataka state was established to provide the package of marketing related services through auction and post-auction facilities. The services include formal documentations, warehousing and commodity funding and price dissemination. Chengappa, *et al.* [11], Chand [12] and Pani and Jena [2] stressed on the need of association of farmers to be organized, in the form of farmer producers organization (FPO) and Contract farming, where e-NAM can overcome the market inefficiency collectively along with value addition which can generate higher revenue and profit for marginal and small farmers.

E-NAM demands an effective infrastructure and services for improving the competitiveness. Studies revealed that electronic platform requires effective integration of standardizing and grading system. A total of 585 APMCs across 18 Indian states have been proposed by the Union Government to be linked with electronic platforms. Hence, the present system of exchange of commodities against some economic value is important for marginal and small farmers. But the existing literature is not enough to address and contribute the critical status of electronic market of agriculture commodities, unique challenges and prospects for marginal and small farming. Moreover, there is no such evidence based scientifically reported case of institutional arrangement for e-marketing of agricultural commodities which helped marginal and small farmers to leverage the benefits.

## 3. Materials and Methods

The paper has basically reviewed the secondary sets of available literature on e-marketing of agricultural commodities. All relevant literature with key words of electronic market, agricultural market, marginal and small farmers, challenges, prospects, aggregation, institutional agricultural marketing, ICT and agricultural marketing were explored. Further the research papers on Indian context have been taken in to consideration for the study. Policy

documents and secondary data on agricultural marketing also sourced from the relevant websites. With respect to research question raised in the earlier, the following research objectives were framed to explain:

- a) To ascertain the state of e-marketing in India in general and Odisha in particular, and identify the grey areas which need to be focused.
- b) On the basis of grey area identified, to review the unique and specific challenges and prospects of e-marketing in agriculture and critically highlight the operational and institutional bottlenecks.
- c) To highlight a success case of institutional arrangement (with respect to e-marketing platform that has benefitted marginal and small farmers) and value chain modeling for aggregation and marketing of maize in tribal district of Odisha.

## 4. Discussion

### 4.1. Status of E-marketing in India in General and Odisha in Particular

Electronic marketing connects the existing APMC mandis through a pan India trading portal, aiming to create a common market for agricultural commodities with transparent information between buyers and sellers. The Union Budget of 2014-15 initiated the proposal for a unified platform linking the physical mandi i.e. Agricultural Produce Market Committee (APMC), Regulatory Market Commission (RMC), Farmer Producers Organization (FPO) with the theme of 'one nation-one market'.

2477 APMC and 4843 sub market yard physical market are registered in the country. Out of the total APMC only 1000 of them are under 18 states and 3 union territories have only been integrated, however only 368 mandis across India are doing online trading on e-NAM. It is observed in [Table-1](#) that bigger states such as Uttar Pradesh, Rajasthan, Gujarat, Haryana, Tamilnadu, Madhya Pradesh, Maharashtra and Telengana together not only cover 50 per cent of the APMC under e-NAM but also these states are advanced with respect to market communication and access. As reported by NSSO, more than one-third of the total food grains come from four Indian states such as Haryana, Uttar Pradesh, Punjab and Madhya Pradesh. The eastern state of Odisha, Jharkhand and West Bengal, which has more than 86 per cent marginal and small holders, have less access to regulated market to sell their produce and hence doesn't get a fair price for their commodity and forced to sell in the rural haat or local market. It is noted that even though more than 50 % of the APMC in smaller state are linked to e-NAM but they function only where the APMC has accessibility and good communication to nearby cities. The APMC in the interior districts has got poor access and awareness of electronic trading platform. There is information asymmetry between the functionaries, traders, producers & administrations and poor functioning of farmer groups with respect to aggregation and leveraging benefits. With respect to the status of e-NAM in Odisha, a total of 41 APMC exists, out of which 25 registered for online trading. Five of them were reported to have trading. Five mandis were found to have connectivity to logistics and communication network.

Electronic National agriculture market led by the amendment of APML act 2017 is an attempt to build a robust supply chain and overcome the challenges faced by the farmers in the country. Secondary data and discussion with experts and farmers in the field revealed two different sets of experiences. Experts and practitioners reveal that the existence and process of connecting the regulated market to electronic platform requires a strong institutional delivery mechanism and participation of the grass root extentioner. The institutional mechanism with transparency will ensure the proper management of the mandis. Secondly, the role of extension worker will develop capacities and awareness among the farmers.

On the other hand, among the farmers it was revealed that farmers lack in awareness about e-trading of agricultural commodities. The role of farmer institutions has brought a collective effort to empower the farmers through better access to market. But despite the progress of online trading of agricultural produce the farmers face new challenges with certain new avenues of opportunities. The second objective of the paper deals with the challenges and prospects.

**Table-1.** All India Status of APMCs registered for e-Trading

State	No. of APMC	Mandis doing Online Trade
Andhra Pradesh	033	018
Chandigarh	001	001
Chhattisgarh	014	008
Jharkhand	019	002
Punjab	037	012
Gujarat	122	008
Haryana	081	033
Karnataka	002	001
Uttar Pradesh	125	060
Tamil Nadu	063	021
Himachal Pradesh	019	017
Kerala	006	000
Jammu and Kashmir	002	000
Telengana	057	018
Madhya Pradesh	080	007
Rajasthan	144	072
Pudducherry	002	001
Maharashtra	118	040
Odisha	041	025
Uttarakhand	016	012
West Bengal	018	012
Total	1000	368

Source: <https://enam.gov.in/web/e-NAM>, 2021(Government of India, 2021)

Stakeholders are important for market institutions to function and trade effectively abiding governance. Table-2 reveals that a total of 1.74 lakhs traders and 93,714 commission agents registered under 1000 APMC in 21 states. Out of 7217 FPOs functioning in the country by 2020, only 1903 had registered under electronic trading platform. FPO as an institution is responsible to institutionalize and boost up the collective strength of marginal and small farmers through aggregation and marketing. But, the situation reflects the adversities of such institutions which remains incapable to leverage the benefit to its members presently. The factor could be budding and nascent stage of FPOs in the country, but governance and institutional collaboration can channelize the existing and new FPOs to such registered electronic market. India has 1138 lakhs marginal and small farmers out of which only 20.5 lakhs farmers have membership of FPOs. In the state of Odisha, a total of 391 FPOs operating, out of which 160 FPOs registered under e-NAM. More than half of the registered farmers have not done a single transaction and hence not benefited at all from the electronics trading platform. Competitive spirit and good governance lacks within the institutions. Effective transfer of technology, awareness and institutional collaboration among the famers are few important dimensions which remain operationally silent and need much attention.

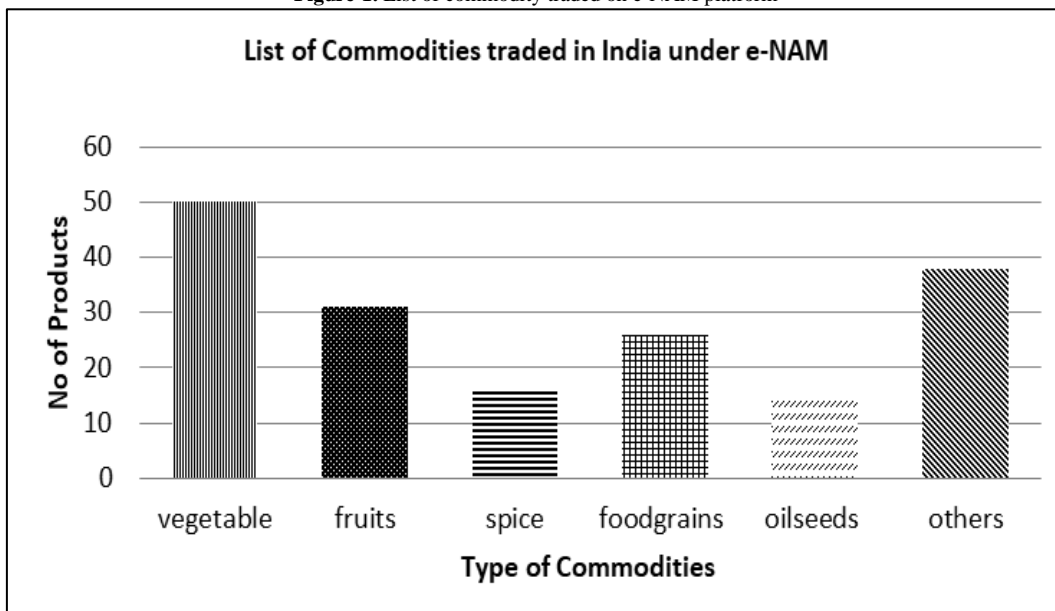
**Table-2.** Status of registered stakeholders in e-NAM for India and Odisha as on 31st May 2021 (Numbers)

Parameters	India	Odisha
Traders	1,69,548	5630
Commission agents	92,079	0
Service providers	0	0
FPO linked	1903	160
Farmers	1,71,35,829	2,08,039
APMCs linked	1000	41
Commodities trading	175	28

Source: <https://enam.gov.in/web/e-NAM>, 2021 [13].

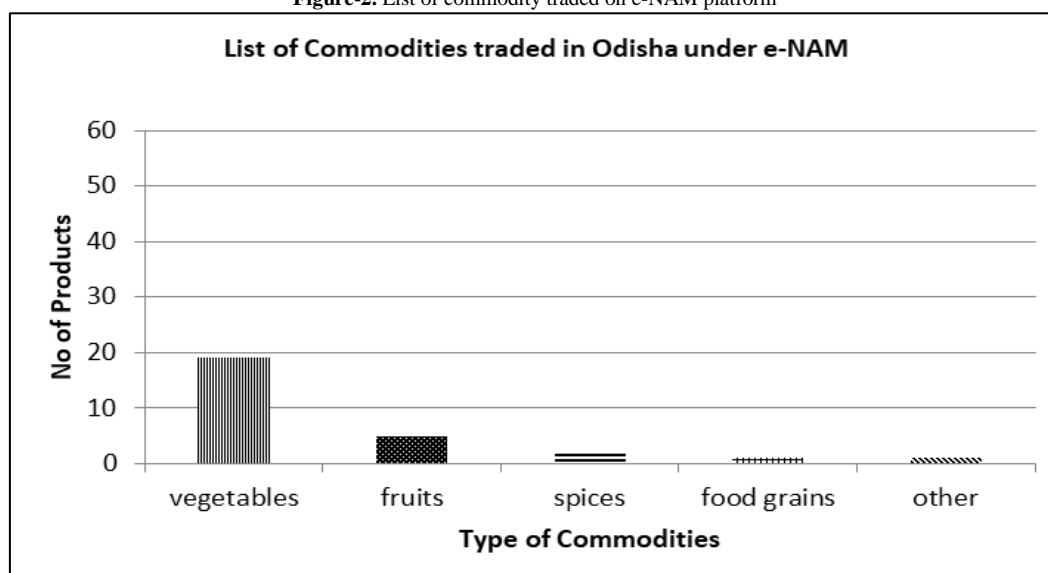
Figure1 reveals that around 28 % of the total commodity traded in electronic market belongs to vegetables followed by fruits 17 %. The absence of cold storage and pack houses with in the regulated market and also with farmers force them to sell their produce just after harvest. Availability of storage units would help the farmers to store their perishable produce and can counter for the higher price with many traders. However, Food grains, oil seeds and spices are traded within the mandi at regulated prices. Moreover the similar situation is also with e-NAM Odisha (Figure 2).

Figure-1. List of commodity traded on e-NAM platform



Source: <https://enam.gov.in/web/> e-NAM, 2021[13].

Figure-2. List of commodity traded on e-NAM platform



Source: <https://enam.gov.in/web/> e-NAM, 2021 [13].

## 4.2. Challenges and Prospects of E-Marketing in Agriculture

Agricultural markets are characterized by poor competitiveness, fragmentation, inefficiency, presence of middlemen and price manipulation. The electronic trading platform is an attempt for transforming the market system and brings a win-win situation for exploited farmers. In the above section, the grey areas which restrict smooth functioning of electronic marketing in India are: complete access and connectivity to regulated market, governance and institutional biasness, information asymmetry among the functionaries, traders, producers & administrations, lack of effective transfers of technology, awareness, and institutional collaboration.

Specific challenges which restrict the growth and functioning of electronic market are:

1. Lack of education, awareness and understanding of technology among the marginal and small farmers.
2. The scarcity of electricity, internet facility, shortage of staff and quality testing facility neglect the process.
3. Lack of market infrastructure, storage, electronic weighbridge, lack of accuracy and timely market information.
4. Lack of suitability, stability and sustainability of farmer institutions to connect such electronic market.
5. Unreliability of traders and commission agent to trade through electronic platform.

Even though there are strategic call and specific program to connect farmers to regulated market, it eventually slow and fails to cater the requirement of market system. The programs such as promotions of 10000 FPOs incentivize agricultural marketing through infrastructure support, risk management but acceptance and adaptation among each stakeholder are major bottleneck.

### 4.2.1. Prospects of e-Marketing

The problem of convincing the stakeholder to adopt e-NAM continues to be prevalent at many places. But innovation of this market system has certain positive role.

1. The auction process happens online to estimate actual demand and supply. As a result, it maintains transparency.
2. It allows farmers to connect nationwide with price commensurate and quality of produce.
3. Online payment attracts safety and security with fair trade and better quality of produce.
4. Electronic trading would boost up and strengthen supply chain of individual produce that would be traded.

### 4.3. Success Case of Institutional Arrangement Under Electronic Market

Nabrangpur, the tribal district of Odisha in India has the highest area under maize cultivation in Odisha and rich in commercial production. Nabrangpur contributes 29 per cent of the total maize production in about 60 thousand ha area in kharif and 9 thousand ha area in rabi season. The average yield was found to be higher (3.9 ton per hectare) in the district as compared to that of national average. Besides the agro climatic conditions, the hybrid and high yielding variety of seeds, which cover 89 % and 93 % of production respectively, is an advantage for marginal and small farmers. However, it is reported that the farmers go with distress sell to the middlemen [14].

The joint initiative of different stakeholders to bring the collective strength of marginal and small farmers by forming Farmer producer company (FPC) was taken to leverage them the maximum benefit in the value chain of maize. Farmers of Umerkote and Raigarh block were supported through MANDI (mainstreaming agriculture producers through network and development initiatives) project supported by GATES Foundation and Department of Agriculture, Govt of Odisha. A total of 13475 numbers of farmers mobilized through an online application and linked them to all possible traders, institutional buyers. Women contribute a major share in the production as well as marketing of produces in the tribal context. Around 40 % of women farmers were also the members of online application portal involved in trading and marketing activities. The operational arrangement in FPC has benefitted the member farmers across the vertical through both backward and forward linkages. The members get input services, credit linkages, price information and matching equity. Table 3, reflects the institutional arrangement for marketing of maize from FPC which has benefitted member farmers across the value chain of maize. needed to express your opinion or interpretation including stated Tables and/or Figures.

**Table-3.** Institutional arrangement for marketing of maize from two FPC

<b>FPC's association with e platforms</b>	<b>Buyers of maize from 2 FPCs of Nabarangpur</b>
<ul style="list-style-type: none"> <li>• e-NAM - Registered and trade initiated</li> <li>• NeML - Registered and trade initiated</li> <li>• Market Yard - Registered and trade initiated</li> <li>• Kisanbazaar - Registered</li> <li>• Kalgudi - Registered</li> <li>• Safalfasal - Registered</li> <li>• Kisanyard - Registered</li> <li>• Cleverkisan - Registered</li> </ul>	<ul style="list-style-type: none"> <li>• Godrej Agrovet, TirupatiBalajee, Raipur,</li> <li>• Indian Broilers; Siddharth Co., Rajaram Maize Products, Rajnandgaon;</li> <li>• Vizainagar Biotech, Vizainagar;</li> <li>• Deo Grains, Khurda;</li> <li>• Ovo Farms, Minerva, Balangir;</li> <li>• Orissa Poultry, Suguna Poultry, Bharat Feeds, Pashupati, cuttack;</li> <li>• Greendale Foods, Coimbatore;</li> <li>• Yashashvi Enterprises, Himalaya Trading, Kolkata;</li> <li>• Venkateshwara Hatchery, Hyderabad;</li> <li>• Other traders are DeHaat, Kamatan, SAM Agro, NCDEX, Kisan Yard, Agri Bazaar, PBC Foods, Arya, Himalay</li> </ul>

Source: Field study

Local price discovery mechanism for the maize was non-existing for lack of transparent auction procurement system in the Mandi (RMC Market yards). Local traders cum money lenders were exploiting the small farmers [1] and forcing them to sell at very low prices. But MANDI project supported activities like organizing FPC, training on e-Marketing, credit mobilization have resulted in direct market linkage of 2,200 Tons of maize to different national level buyers as mentioned before.

Most of the farmers have got additional money of Rs 800-1500 per Ton over the prevailing local trader prices by supplying through the FPCs and received money in account within 48-72 h of the supply. The entire system from Farmer on boarding is digitalized using mobile based applications along with traceability systems for the first time.

The institutional arrangement and collaboration for procurement and marketing of maize in the tribal district of Nabrangpur where about 92 % farmers are marginal and small could able to leverage the benefit across the value chain. The electronic trading platform in a poor tribal district of Odisha, which is not even connected to mainstream communication, is an example for across the country to replicate the model with specific produce, different context grows. Collective strength with institutional collaboration is triumph over the distress and exploitation that farmers face.

Institutional collaboration and innovation at grass root level leverage the economic benefit to the farmers. In the course of agricultural development, there are many verticals across the value chain which remains untouched. Along

with the marketing of agricultural produce innovations, value addition, risk coverage, institutional linkages and robust institutional governance across the entire value chain has been a necessary action to operationalize for fostering the prospects in e-marketing. The above case of institutional arrangement has benefited the farmers to ensure a better economic return. But at a larger scale and to generalize the condition of business performances various farmer institutions through collective actions can leverage the benefits.

## 5. Conclusion

Marketing of agricultural produce among the farmers is an important issue. Farmers face various challenges to overcome the problems. The amendment of APMC act and e-NAM is a landmark decision by the policy makers. The operation of e-NAM across the different regulated market is at a nascent stage. Farmers come across various bottleneck but there are also various untapped prospects which is highlighted in the above section. Recreating the problems and bottleneck in to opportunity and capitalizing innovations, risk coverage, institutional collaborations, and good governance through collective efforts of farmers such like the above case of farmer institutions can be added advantage. However, effective and efficient functioning of e-NAM can be explore and examine with various stakeholders and experts. Stability along with sustainability of the electronic platform to leverage the benefit to marginal and small farmers across the regulated market is thought to be essential.

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## References

- [1] Dev, M. S., 2012. *Small farmers in India: Challenges and opportunities. Working Paper WP-2012-014.* Mumbai: Indira Gandhi Institute of Development Research. pp. 1-35.
- [2] Pani, S. K. and Jena, D., 2020. "Agricultural marketing in India: a review on challenges and prospects." *Journal of Critical Reviews*, vol. 7, pp. 4169–4174.
- [3] National Commission on Agriculture, 1976. "India, G. of. Report."
- [4] Singh, S., 2008. "Producer companies as new generation cooperatives." *Economic and Political Weekly*, vol. 43, pp. 22–24.
- [5] BIRTHAL, P. S., JOSHI, P. K., and GULATI, A., 2005. *Vertical coordination in high-value commodities: Implications for smallholders. Markets, Trade and Institutions Division (MTID) Discussion Paper No. 85.* Washington DC, USA: International Food Policy Research Institute. pp. 1-54.
- [6] Raj, R., 2018. "Problems and prospects of agricultural marketing in india: An overview." *Problems and Prospects of Agricultural Marketing in India*, vol. 4, pp. 810–816.
- [7] Fafchamps, M. and Minten, B., 2012. "Impact of SMS-based agricultural information on Indian farmers." *The World Bank Economic Review*, vol. 26, pp. 383–414.
- [8] Jensen, R., 2007. "The digital provide: Information (technology), market performance, and welfare in the South Indian fisheries sector." *The Quarterly Journal of Economics*, vol. 122, pp. 879–924.
- [9] Jairath, M. S. and Yadav, H., 2012. "Role of ICT in decision making in agricultural marketing-a case of arid India." *Indian Journal of Agricultural Economics*, vol. 67, pp. 376-384.
- [10] Bisen, J. and Kumar, R., 2018. "Agricultural marketing reforms and e-national agricultural market (e-NAM) in India: a review." *Agricultural Economics Research Review*, vol. 31, pp. 167–176.
- [11] Chengappa, P. G., Arun, M., Yadava, C. G., and Kumar, H. M., 2012. "IT application in agricultural marketing service delivery-electronic tender system in regulated markets §." *Agricultural Economics Research Review*, vol. 25, pp. 359–372.
- [12] Chand, R., 2016. "e-Platform for national agricultural market." *Economic and Political Weekly*, vol. 51, pp. 15–18.
- [13] Government of India, 2021. "No. of mandis doing online trading. National agriculture market." Available: <https://enam.gov.in/web/mandis-online>
- [14] Shekara, P. C., 2018. *Agri vikas 2018; unleashing agri and allied entrepreneurship in new Odisha.* Jaipur: CCS NIAM.