



## MARKET ACCESS IN THE DIGITISED AGRICULTURE INDUSTRY OF INDIA

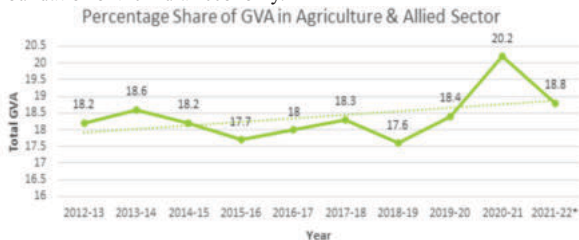
**Manoj Chaudhary** Research Scholar Silver oak university

**Dr. Samir Gopalan** Dean Director Silver oak university

## KEYWORDS :

## INTRODUCTION

Agriculture is still a vital industry, as was particularly clear during the Covid-19 epidemic when its resistance greatly benefited the populace and the economy even while its share of the GDP has been dropping since 1947. The sector's gross value added increased by 3.6% in 2020–2021 and further to 3.9% in 2021–2022 (see below). Recently, the agriculture industry has been experiencing a crisis primarily due to fragmented landownership, higher cultivation costs, low institutional credit, rising farmer debt, a lack of sufficient market connections, climate change, the commercialisation of farmers by various parties, etc. Over three lakh farmers have committed suicide over the past 20 years due to these and other factors. Being the primary source of income for roughly half the population, agriculture is regarded as the foundation of the Indian economy.



\* 2021-22 as per 1<sup>st</sup> advance estimates of National Income. Source: Economic Survey 2021-22

India's agriculture sector has seen numerous evolutions since the dawn of humanity. The conventional cultivation techniques used in India required much time and were ineffective. The much-needed increase in crop output and efficiency was brought about by the Green Revolution in the 1960s. Additionally, every year, a number of policy initiatives are introduced, including infrastructural development, institutionalised credit, quality of supplies, research and extension, market connectivity, and diversification.

At the moment, a revolutionary idea based on the digitisation of agriculture is pushing the agriculture sector to greater levels in terms of quality, yield, and production. The Indian Government has acknowledged the relevance of digitising the agriculture industry and intends to have widely adopted digitisation of the sector through various programmes and the assistance of various private enterprises by 2025. One way to boost farm production, enable improved resource utilisation, and expand knowledge-based services is through the digitisation of the agricultural value chain with the aid of agri-tech and agri-fintech firms.

In order to maximise return for the farmers, the Indian Government has three key agendas: raising agriculture output, enabling greater resource utilisation, and expanding knowledge-based services. Specifically, the three main target areas for digitisation activities are;



This article examines the growth of digitisation in agriculture, focusing on the market accessibility factor and the various initiatives under e-Mandi or e-Market.

## Digitising The Indian Agriculture Sector

Utilising technological solutions enables dependable agricultural management and monitoring. Farmers can act appropriately and avoid using excessive amounts of pesticides, fertilisers, and water since they

have access to a complete computerised study of their crops in real time. Thus, the only option for the Government to double farmers' incomes and significantly improve farmers' lives is through the digitisation of the agriculture value chain.

As a result, digitisation benefits farmers in the following ways;

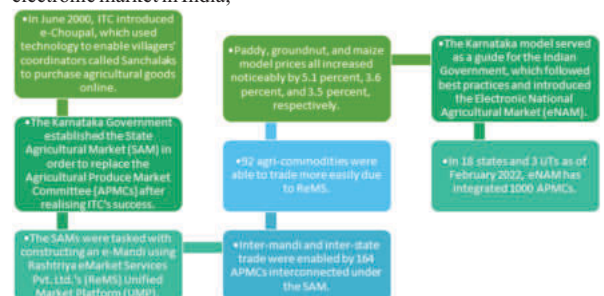


Following are the major events as a part of the digitisation of agriculture in India;

1. The Digital Agriculture Mission 2021–2025, which intends to promote and expedite projects based on cutting-edge technologies, including AI, blockchain, remote sensing, robotics, and drones, was announced in September 2021.
2. Five Memorandums of Understanding (MoUs) were inked with Cisco, Ninjacart, Jio Platforms Limited, ITC Limited, and National Commodity and Derivatives Exchange (NCDEX) e-markets Limited (NeML) to develop digital agriculture through pilot projects.
3. Cisco developed an Agricultural Digital Infrastructure (ADI) solution to enhance farming and information sharing.
4. NITI Aayog and IBM have collaborated to develop an AI-powered agricultural production forecast model that will give farmers access to real-time data and the necessary guidance.
5. In order to assist India's small-holder farmers, Microsoft and the Indian Government have collaborated to operate a trial programme called "Unified Farmer Services Interface." Through enhanced price control and increased agricultural productivity utilising AI sensors, the alliance seeks to increase farmers' incomes.

## Evolution of the e-Market System

The following timeline depicts how the Government initiated a unified electronic market in India;



Source: Forbes India (by Abhishek Vishwakarma and Anjal Prakash)

## Digital Market Access And Its Significance

Farmers in the traditional market system, known as the mandi, receive a very small portion of the rupee because there is a lengthy chain of middlemen in the physical marketplace, which adds two significant costs: the intermediaries' margins and various handling charges. The traditional framework also has a number of restrictions linked to direct marketing laws, several taxes and licences, logistics, and

infrastructure. The Centre began to envision developing a unified electronic agricultural market, also called an e-Market or e-Mandi, as a result of these issues with the current system and the poor returns to farmers.

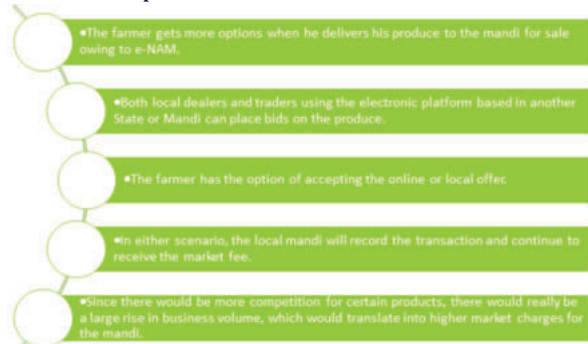
The idea of this unified market has been put out to promote market transparency, take advantage of cutting-edge technology for a tightly controlled market, and promote engagement and incentives for the full agricultural value chain from producer to consumer.

**e-NAM**

The National Agriculture Market (e-NAM) is a pan-Indian electronic trading site that connects the existing APMC mandis to produce a single unified market for over six agricultural commodities. By streamlining processes across integrated marketplaces, eliminating information disparity between buyers and sellers, and encouraging real-time price discovery based on factual demand and supply, the portal seeks to enhance uniformity in agriculture marketing.

The Government of India (through the Ministry of Agriculture & Farmers' Welfare) invested in developing the e-NAM electronic trading platform. It provides a "plug-in" for any state-operated market yard (whether regulated or private). Each mandi that accepts to join the national network is given free access to the specific software created for e-NAM with the appropriate customisation to comply with each State Mandi Act. The stakeholders that the portal serves are the states, traders, commission agents, service providers, FPOs, and farmers.

**The relationship with the APMCs and e-Nam**



The portal also clarifies that e-NAM is a tool to construct a nationwide network of physical mandis that can be accessed online, not a parallel marketing organisation. This online trade platform aims to take advantage of the mandi's physical infrastructure, allowing buyers outside the mandi/state to engage in a local business. Through improved price discovery, the platform gives farmers and sellers greater trading transparency. More markets and consumers become accessible for trade in this way. A solid transaction can be made using real-time price and arrival information. Additionally, farmers and sellers have the option of receiving the funds directly, providing them with the possibility to establish a stronger financial profile.

**Statistics**

As of 30<sup>th</sup> November 2022, there are 1260 e-Mandis and over 2 lakh traders registered under e-Nam, with the highest number in Rajasthan at 146 mandis and 83,705 traders. Overall, a total of 1,22,433 unified licences have been issued by various states under e-NAM.



Source: enam.gov.in

**Notable Cases**

- The Madhya Pradesh state has registered the Mahakaushal Progressive Farmers Self Reliant Producer Company Ltd.

(MPFSRPCL), which provides support to 3,000 farmers in 29 villages. The farmers were able to earn an additional Rs. 70 to 150 (about \$1 to \$2) per quintal using the e-NAM platform. Their reduced reliance on middlemen was beneficial.

- In May 2018, the Girimala Farmers Producer Company Ltd. (GFPCL), an entity created to assist Gujarat's small and marginal farmers, was made available on the e-NAM site. Earlier, the farmers sold at the neighbourhood markets. They were able to lessen multi-handling and reliance on middlemen by utilising e-NAM. For the commodity Maize, they made a profit of Rs. 200 (or around US\$ 2.7) per quintal.

**Issues To Be Addressed**

Even though the Government has taken steps to digitise a number of sectors, including agriculture, there is still a significant digital literacy gap, particularly among farmers in rural India. It is urgently necessary to impart citizens technological literacy if they are to utilise the e-market fully and effectively.

Regarding the accessibility and homogeneity of agricultural data, there is yet another significant problem. The process is slowed down even further by inconsistency and the difficulties in locating centralised data about farms, crops, etc. Moreover, data reliability will indirectly encourage more institutional lenders to step forward and make farming a profitable industry. To address the development of the Indian Digital Ecosystem of Agriculture (IDEA), the Department of Agriculture, Co-operation and Farmer Welfare, Government of India, published a consultative paper in 2021. IDEA's main goal is to build a Unified Farmer Service Interface (UFSI), which will aid in creating distinctive data identifiers for farms, crops, and other elements. Once IDEA is operational, lenders may use it to verify data before authorising loans to farmers.

Finally, the e-Market faces interoperability issues that need to be resolved. When a seller submits a price quote on any marketplace, such as e-NAM, e-Choupal, UMP, e-Choupal, or other private mandis, interoperability should offer the best quote across all marketplaces to win ultimately. This way, a standard protocol for interoperability would enable several platforms to coexist and be acknowledged as a legitimate market by other e-Markets.

**CONCLUSION**

Digitising the agriculture value chain has majorly improved the livelihood of people living from agriculture; however, there are still problems, such as middlemen's control. The price spread widens as a result of the middlemen, who also take the lion's share of the profit. The idea of e-Markets proves to be a milestone in the effort to reduce the role of middlemen and make direct selling of commodities to the trader. It connects farmers nationwide and gives them the opportunity to sell their produce to buyers or traders in any state who provide the highest price, improving price discovery.

The emerging alternative models will coexist in India with the established market model of marketing agricultural products. Numerous studies have emphasised the need to increase the effectiveness of how regulated markets operate. Now that the initiative has been launched, all that is needed is to ensure appropriate operation, infrastructure development, certification administration, and maximum farmer involvement in e-Markets. This will ensure that the goal of developing an e-Market system is achieved, the farmers receive the most advantage, and the role of intermediaries is reduced.

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