



E-Technology: An Impact on Farm Management

Israni R*

Ministry of Agriculture and Farmers' Welfare, Govt of India SP Member (Ex), India

***Corresponding author:** Dr Rita Israni (Retd) Central Agmark Laboratory, DMI, Ministry of Agriculture and Farmers' Welfare, Govt of India SP Member (Ex), Spices and Culinary Herbs, FSSAI, New Delhi, Govt of India, India, Email: ritags2@gmail.com

Received Date: June 17, 2024; **Published Date:** August 23, 2024

Abstract

Electronic Technologies have grown extensively in the recent past in all parts of life. E-technology in aid of the Farmers is trying to enhance the Agricultural sector and Farmers have embraced the advancements quite efficiently. E-Technology has its own advantages in Farming by increasing the yield as well as Marketing of the Farm Produce of the Farmers. National Agriculture Market (e NAM) is a pan-India electronic trading portal which networks the existing Agriculture Produce Market Committees (APMC) mandis and other market yards to create a unified National market for Agricultural Commodities. The main disadvantage of E-Technology is that its reach is still very poor as it is being used by the already advanced Farmers thus creating a wider wealth gap and also the cost involved in ensuring these services is tremendous and hence, it is high time to fill the digital gap for Farmers and to adopt a holistic approach to address the challenges faced by the Agriculture sector.

Keywords: Farm Management; E-Technology

Abbreviations

eNAM: National Agriculture Market; APMC: Agriculture Produce Market Committees; AI: Artificial Intelligence; AGMARKNET: Agricultural Marketing Information Network; APMC: Agriculture Produce Market Committees; SFAC: Small Farmers Agribusiness Consortium; ICAR: Indian Council of Agricultural Research.

Introduction

Agriculture, a crucial sector, is seen undergoing immense changes with the Innovations in recent years. E-technology in aid of the Farmers is trying to enhance this sector. Farmers have embraced the advancements quite efficiently and are constantly seeking new ways to manage their Farms in a more and more effective form.

E-technology i.e. Electronic Technology relates to the use of Internet related Information Technologies as well as Digital Technologies. E-Technologies have grown extensively in the recent past in all parts of life and with its integration, Agriculture too has grown immensely. E-Technology has enabled Farmers to make use of well informed choices, enhance productivity and with better Transportation system have a better access to wider markets of their choice and thus get a better market share [1-3].

Drones and artificial intelligence have helped in the monitoring and treatment of crops far more efficiently. Both, Drones and Precision Agriculture are growing hand in hand, and Newer Technologies are evolving to enable Artificial Intelligence (AI) [4] to help gather, interpret and act on real-time data. Science has advanced so much that drones and AI can operate advanced sensors and collect Crop images and

Data that helps in the diagnosis of Crop Health and Diseases.

Beneficial Outcome of E-Agriculture

Bridging the gap between the Farmers that enhances the Quality of life of Farmers IT innovations support Rural and under developed markets which help in building a productive and competitive market,

- Farm animals are fed and monitored by Electronic Sensors and identification systems.
- Access to Price information, Agriculture information, National and International markets, Increasing Production Efficiency

Advantages of E-Technology

Some of the benefits derived by the Farmers are

Precision Agriculture: can help farmers to increase their yields by up to 20% and reduce their input costs by up to 10% e.g. using GPS-guided tractors to apply inputs more precisely.

Monitoring of Crops: Farmers can deploy drones for continuous and real time monitoring of all types of pest attacks, hailstorms etc. Moreover, Environmental Monitoring can help in reduced use of pesticides and minimise soil erosion via real time monitoring.

Irrigation: With the use of innovative Artificial Intelligence (AI) enabled methods, watering the crops has become much easier and more efficient. Farmers can use sensors to automatically turn irrigation systems on and off when needed. The Efficient utilization of water, thus, can help counter the declining groundwater level [5].

Crop Safety: Processing of data gathered from sensors over a period of time can help the Farmers make decision on crop cycles and cropping patterns. Sensors and integrated systems also ensure the safety of crops from vermin and pests.

Easy Financing: Faster sanction of loans is possible due to the extensive banking networks established throughout.

Better outreach: Use of E-technology would be helpful in spreading ideas and innovations to all levels of farming sectors is small and medium farmers as well as backyard farmers who also play a significant role in promoting agriculture.

Alternative Methods: such as Agricultural extension services providing access to Agricultural Crop Information, New Seed varieties, Barcode Scanners, Automated Warehouse Inventory Management facilities etc.

Benefits of Marketing of the Produce

Supply chain management: This can help to reduce Food waste and improve Food Safety. According to a report by the World Economic Forum, Food waste can be reduced by up to 50% by using E-technology to improve supply chain management.

Global market access: helps in getting to know the trends of International Prices, International Market Regulations and Certifications.

E-commerce and Online Marketing: Both Central and State Government have taken initiatives to develop a number of online Marketing Platforms integrating Electronic Technology and Farming. Through Digital Platforms and Social Media, Farmers can sell their Produce to the Retailers, Consumers and Restaurants. Direct access to Consumers, thus eliminates middlemen, hence fetching higher price e.g. e-NAM Thus, Farmer and the Consumer, both are benefited from Real Time Price Updation due to enhanced transparency.

Agmarknet

- Agricultural Marketing Information Network (AGMARKNET) was launched in 2000 by the Union Ministry of Agriculture.
- This e-governance portal AGMARKNET, implemented by National Informatics Centre (NIC) [6], facilitates the generation and transmission of prices, commodity arrival information from Agricultural Produce Markets, and web-based dissemination to the Producers, Consumers, Traders, and Policymakers transparently and quickly.

National Agriculture Market

- National Agriculture Market (e NAM) is a pan-India electronic trading portal which networks the existing Agriculture Produce Market Committees (APMC) [3] mandis and other market yards to create a unified National market for Agricultural Commodities.
- NAM is a “virtual” market, but it has a physical market at the backend.
- Small Farmers Agribusiness Consortium (SFAC) [7] is the lead agency for implementing eNAM under the aegis of Ministry of Agriculture and Farmers’ Welfare, Government of India.

The Vision and Mission

The initiative to create this Portal had the Vision and Mission as under:

- To promote uniformity in Agriculture Marketing by streamlining of procedures across the integrated markets, removing information asymmetry between buyers and sellers and promoting real time price discovery based on actual demand and supply.
- Integration of (APMCs) across the country through a common online market platform to facilitate pan-India trade in Agriculture Commodities, providing better price discovery through transparent auction process based on Quality of Produce along with timely online payment.

Along with the advantages, E-agriculture has lots of Problems like

- The distribution of the Technologies is not uniform throughout the country. The use of Technology is being used by the already advanced Farmers thus creating a wider wealth gap . The small and marginal farmers are as always, being left out in the process of development.
- Internet connectivity in Rural areas: The reach of the Technology is still very poor and a large number of Farmers are still ignorant about such advanced Technologies
- The cost involved in ensuring services is tremendous. Due to the low Literacy/computer Literacy rate among the Farmers and the digital divide, there is a rise in a new class of middlemen, who provide Technical services to the Farmers.

The Indian Council of Agricultural Research (ICAR) [8-10] has compiled over 100 mobile apps developed by ICAR, State Agricultural Universities, and Krishi Vigyan Kendras, but in spite of that, the Agriculture sector has still not been able to overcome the digital divide that is prevalent for so many years between the Rural and Urban development scenarios. Hence, it is high time to fill the digital gap for Farmers and the most important is to adopt a holistic approach to address the challenges faced by the Agriculture sector to achieve inclusive growth and sustainable development.

References

1. Directorate of Marketing and Inspection (2024) Ministry of Agriculture and Farmers, Welfare, Government of India. Agricultural Marketing. DMI, Agmarknet.
2. e-NAM (2022) Small Farmer Agri-Business Consortium, Ministry of Agriculture and Farmers, Welfare, Government of India. National Agriculture Market Project.
3. APMC (2024) Nagpur Agriculture Produce Market committee, Nagpur. Indoor Systems Solutions Pvt Ltd.
4. MAPMC (2024) Mumbai Agricultural Produce Market Committee, Mumbai. APMC.
5. Agmark India (2008) Agricultural Marketing & Agri Business in India. Farmers Innovation.
6. AgriMkt (2022) Department of Agriculture & Farmers Welfare. Overview on Agriculture Marketing.
7. Krishi Bhavan (2024) Indian Council of Agricultural Research.
8. Vajiram, Ravi (2024) How does e-Technology help Farmers in the production and marketing of agricultural Produce. Vajiram & Ravi.
9. Rogers J (2023) Innovation in Agriculture: 6 Agriculture Innovations that will have an impact on the Management of Farming. Miller.
10. (2023) E-technology in the aid of farmers: Economic Notes. ClearIAS Team.