



# International Journal of Innovative Research in Computer and Communication Engineering

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## E-Agriculture Information Monitoring System Using Data Mining

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**ABSTRACT:** Agriculture is the main occupation in India. More than half of the population of India is engaged in agriculture sector, majority of farmers in India are economically infirm. Indian Farmers are unaware of the new techniques and new arrivals in the agriculture sector and because of this they are unable to compete with farmers of developed countries in globalised market. Though the farmers work hard, they are cheated by agents in today's market. Information a communication technology can play important role in agriculture sector to increase income and economical standard of farmer. In this paper we are interested to introduce a new concept useful for farmers who are adopting latest technologies and are having basic knowledge about technology. Our aim is to provide easy and efficient platform for agriculture market transactions and to bring accuracy and transparency in agricultural marketing system through e-agriculture. Our project intend to provide reliable and efficient communication and interaction environment between different stakeholders of market, farmers can search merchants who are giving highest price for his crops. Similarly trader can also find farmers with required crops. Government authorized person can watch all the transactions happened between merchant. The government has all the authority regarding to transactions happened in the system. Our system will also provide helpful information like minimum support prices of different crops their market prices, different facilities provided by the government, weather forecasting information to farmers. We are trying to develop a system that will help to solve problems currently faced by the agriculture market.

**KEYWORDS:** E-agriculture, Data mining, K- means, Apriori algorithm, Weather API.

### I. INTRODUCTION

E-agriculture is the web application that will help the farmers to perform the e-marketing of their crop products leading to fair price transactions and increased profit and standard of living. In India trade of agriculture product is regulated under the state APMC (Agriculture Produce Marketing Committees). Trade in APMC market are carried as direct auction by licensed commission agent, and details are manually noted by commission agent, hence government does not have exact and accurate on time trade records. Agriculture is an information intensive industry which is spatial in nature. In proposed system of this paper we will try to establish an e-governance on these market yards. In system we will have different login for farmer, trader and administrative login for government authorized person. Farmer will be able to add his crop information; farmer can see base prices declared by government for different crops. On the basis of this information he can search for merchant who is offering highest price. Merchant can also find a farmer with required crops. Administrative login will have access to all the transactions happened in system.

Government can collect all this information through system, Government can find out available quantity of different food commodities in market which will be helpful for government to decide further policies like import/export strategies, price declaration. While registration in the system unique ID of farmer and government authorized license ID of merchant will be collected which will be helpful for bringing transparency in marketing system. As government is avail with merchants license ID and all the transactions done by him government can use this data to cross check merchants warehouse /storage quantity. This will be helpful for preventing black marketing of necessary agricultural commodities and stopping artificial price inflation. Along with this farmer will have on touch access for different market prices for crop, policies and schemes declared by the government, information about the weather



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forecast. With the help of website interested farmers can also know about new agriculture technologies and techniques which will help them for earning higher profit.

## II. LITERATURE SURVEY

Saurabh A. Ghogare, Priyanka M. Monga, Ram Meghe, (2015) introduced “E-Agriculture Introduction and Figuration of its Application”. In this paper the authors have presented E- agriculture application. This paper explains the main advantages of the use of Information and communication technology (ICT), and focuses on different factors discovered for effective utilization of ICT for agriculture boost up and to maximize profit of farmers. E-agriculture is a rising field and can play very important role in improvement of rural and agriculture sector. Author’s of this paper aims to reach farmers for their awareness about usage, perception about e-agriculture. “E-agriculture is platform for supporting marketing of agricultural products”. [1]

L. Pradhan, B. B. Mohapatra, Fakir Mohan, (2015) proposed “E-agriculture: A Golden Opportunity for Indian Farmers” [3]. This paper explores the contribution that has been attempted under e-agriculture and information and communication technology. Data related to agriculture sector is very intensive and spatial in nature this data can be properly maintained through ICT which will help in agriculture industry. The demand for agriculture data is now stronger than ever before. Making farmer aware of e- agriculture platform and new technology will help to maximize profit and to compete with farmers of developed countries in today’s globalised market. [3]

Sindhu M R, AdityaPabshettiwar, Ketan.K.Ghumatkar, Pravin.H.Budhehalkar, Pares.V(2012) proposed “E-Farming”. This paper states E-farming will serve as a efficient way for the Indian farmers to sell their products across the country just with some basic knowledge about how to use the website. Proposed system of this paper will guide the farmers in all the aspects, the current market rate of different agricultural commodities and crops, the total sale of the products and the profit earned for the sold products, and system will provide access to the new farming techniques through e-learning and will provide centralized approach to view different government’s agriculture schemes provided by the government. Author also discusses about getting necessary information about the markets and different products can be made possible through the SMS facility provided by the system [4].

D.Vinoth1,K.Shanmugapriya, (2015) presented “E-Agro Crop Marketing for Farming Community”. The eAgro crop marketing system will serve as a better way for the farmers to sell their products within the market with some basic knowledge about using the website. This would helpful for providing current information to the farmers about market rate of agro-products, their sale history and profits earned by them in a sale. This site will also help the farmers to know about the market information and farmer can view agricultural schemes provided by government [5].

SumithaThankachan, Dr. S.Kirubakaran, (2014)proposed “E-Agriculture Information Management System”. This Paper discusses about technological importance of information about agriculture sector for decision making. The study used statistical survey to check the awareness of farmers to check their awareness about e-commerce. In proposed system of this paper for improving productivity in agriculture advice is given to the farmer both in timely and personalized situation. The paper highlights e-agriculture as a platform for supporting marketing of agriculture products. [9]

GhodkeTushar D. DevdeNitin N proposed in the paper “E-Farming: an Innovative Approach for an Indian Farmer” [8] a system

that will be helpful for multiple users like farmer, government, bank authority. In this system communication is established between these stakeholders through a web portal. Government will provide necessary information about market, weather and different schemes to farmer. Bank Authority will give loan information, EMI, Loan payment notification which will be helpful to establish a simple and reliable banking system with farmer. [8]

NileshDumbre presented “System for Agriculture Recommendation Using Data Mining” This Paper focuses on understanding soil and climate condition and with the help of different data mining algorithms system will suggest suitable crops for farmers land. So it will be easy for farmers to decide which crop to in his soil in unpredictable



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condition. Data mining algorithms will help to answer different questions that cannot be addressed through simple query reporting technique.[10]

### III. EXISTING SYSTEM

Agricultural marketing is mainly the buying and selling of agricultural products. In existing system of the Agricultural produce market committee (APMC) transactions are carried at market places by direct auction, and details of these transactions are manually recorded by market agents. Because of the government does not get time to time and accurate data of market. In current market system farmers has to communicate with merchants through market agents hence present APMC market system makes farmers vulnerable to traders' and marketing agents' price manipulations. Farmers are levied with different taxes and charges in this system.

In our country there are some government web sites related to the agriculture market. These websites provides the basic market information such as market prices of different agriculture goods and their availability in the markets. But there is no system to keep watch on every transaction in the market. "AGMARKNET" is one of the government website for supporting digitization of agriculture markets. Under "AGMARKNET" centrally sponsored scheme 93 regulated markets have been provided with computer and Internet connectivity for effective price dissemination among farmers through AGMARKNET website. The information about commodity prices prevailing in various markets is made available. With help of this information the farmers would be able to get better price of their produce by moving their produce to the market which pays higher. But through this website farmer can only search for markets which are giving higher prices for their products there is scope for adding more useful features to existing system.

### IV. PROPOSEDSYSTEM

In proposed system we are developing an interactive platform for communication and information exchange in between farmer, merchant and government. All these three users will have their own registrations and logins. Farmers and merchants will be able to do transactions from system. Farmers can search for traders in market who are giving higher prices for farmer's crop. In similar way trader can also search farmer from database with required crops. Farmer and Trader can communicate with each other about selling and buying products. All the transactional data between farmer and merchant will be stored in database. We will be using different data mining algorithms like k- Means, Apriori, k-NN for performing above operations and MD 5 algorithm for encryption of important data in our system. System will be helpful for solving current problems faced by the agriculture market.

In our system government will have complete access of transactional database which will be helpful for bringing transparency in the agriculture market. This will help government for minimizing and controlling black marketing of food grains. System will also provide helpful information like weather updates. Farmer will able to see different government policies and important notifications, minimum support prices of different crops etc. Our aim is to develop a user friendly web portal.

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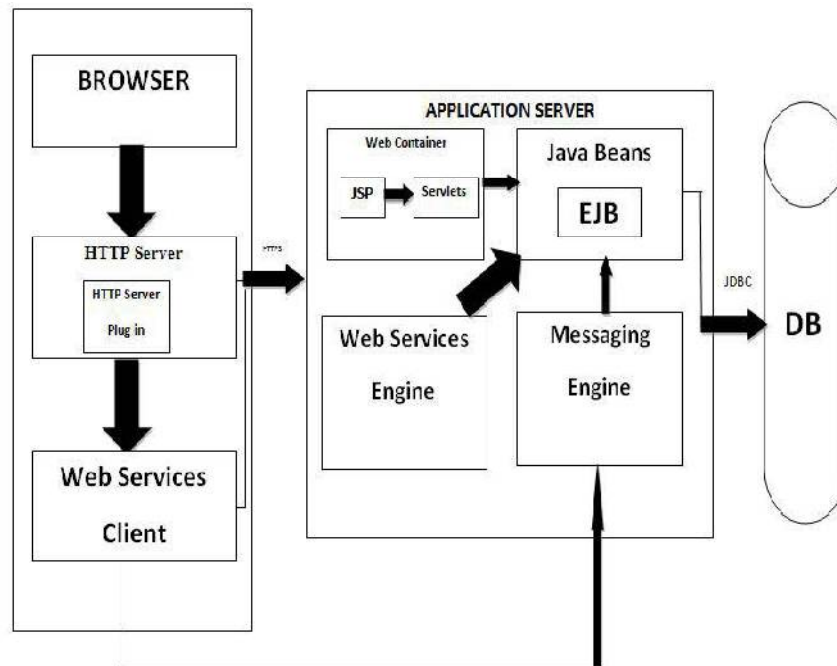


Fig 1. Proposed system architecture.

## V. CONCLUSION

Thus we can conclude that proposed system of “E-agriculture information monitoring using data mining” will be helpful for farmers to gain fair price for crops and other market information time to time. As we are providing unique id to each user it will be helpful for government to keep eye on market which will improve the transparency of market. System will help to make overall procedure easier and less time consuming.

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