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Development of Portal for Farmers to Sell Productsat Better Rate

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Abstract **- Agriculture is considered to be the backbone of India. There are many people who are involved in farming mostly belong to the lower class and are stuck in poverty. The emergence of middlemen in the Indian agricultural marketing sector can be traced back to as early as bartender system times. The interference of middlemen has led to poor lifestyle for the farmers since time immemorial. The development of a portal will serve as a way for the farmers to sell their products across the country. The portal helps the farmers in registering themselves easily and selling their produce. The farmers can gain more profit than usual by using the web portal since it forms a direct connect to the customers. Removing the intervention of the middlemen. The total sale and the earned profit for the sold products, and customer needs are better known by the farmers through the portal. This would overall give a clear idea to the farmer as to what the customer requirements are and to how to grow only the required crops and needed investments for the same as alike. The algorithm used helps in allocating the highest requirement customer to the farmers to gain better profit. It also helps the farmers in selling their produce quicker. Thus, by this portal the farmers gain more profit hence increasing the country's economy.**

Keywords — Agriculture, poverty, middlemen, agricultural marketing sector, bartender system, intervention, algorithm, highest requirement customer.

I. INTRODUCTION

Gone are the times when the world used to depend a lot on agriculture and now, agriculture is dependent on the world. Agriculture is something that people have started to become lethargic on, forgetting that it is what is keeping us alive. But there are still some hardworking, passionate farmers whose life runs on just farming. But there is also the corruption that is increasing a lot nowadays. Farmers, right from sowing the seeds to dispatching the grown crops spend a lot of blood and sweat. They will obviously expect the right amount of money for their efforts. But not every consumer gets the farm products at the "FACTORY PRICE." They go through three to four middlemen and reach the customer with almost double the actual price. The same goes with the farmers. If they have to buy manure or some pesticides, they don't get it at the right price at the right quality. This is not a recent occurrence. This corruption even on the farm products has been happening over a long period of time.

The main goal of project is to ensure fair price to the farming community by devising new techniques and by making use of online market. An application, that serves as a platform for movement of agricultural products from the farms directly to the consumers or retailers. The proposed mobile and web application provides opportunity for both farmers and consumers to buy and sell the required farm products directly without involving a middleman at its right profitable price. The ultimate goal of this web application is to integrate agricultural community together for better production planning for farmers and other agricultural producers. Better rates for vegetables, make farmers live with pride and make additional income is the ultimate goal of the system. There are several online web portals as well as android-based applications which are based on a similar idea. But the majority of them end up adding sellers as an intermediates , which again involves an indirect supply chain. Establishing an online commerce platform to boost the regional economy is another important step. The paper consists of the following subdivisions. Section II represents the research gaps containing various models of E-trading systems that benefits the producers and the consumers. Section III discusses the proposed web application along with the functionalities designed to maximize profit for the farmers. Section IV shows the screenshots of the web application along with the price and profit comparison of traditional method and the DigiShetkari application. Finally, the conclusion and future enhancement are mentioned in the last section.

II. LITERATURE SURVEY

For the development of this system, we studied some previous papers.

The paper [1] "Spry Farm: A Portal for Connecting Farmers and End Users" by Sneha Iyer et al. explores the development of an online portal called Spry Farm, which aims to connect farmers directly with end-users. The authors argue that Spry Farm has the potential to transform the agriculture industry by providing a platform for farmers to reach a wider market and connect directly with end-users. Additionally, the portal can help to reduce waste and improve efficiency by enabling farmers to sell their products directly to customers without the need for middlemen. The authors conclude that the development of portals such as Spry Farm can help to create a more sustainable and equitable food system for all. The system described in paper [1] consists of a web application developed using CSS, JavaScript, SQLite3 for direct selling of farmer's produce to the customer without any middlemen but it doesn't have the local language support.

The paper "Krishi Portal: Web Based Farmer Help Assistance" by Md Iqbal et al. [2] discusses the development of an online portal called Krishi Portal, which aims to provide assistance and support to farmers. The authors argue that Krishi Portal has the potential to transform the agriculture industry in India by providing farmers with access to information and resources that can help them to improve their operations and increase their productivity. Additionally, the portal can help to create a more sustainable and equitable food system by providing small-scale farmers with the support they need to compete in a global market, but local language support is missing in this system.

The paper [3] "Agriculture marketing using web and mobile based technologies" by Abishek et al. explores the use of web and mobile-based technologies for agriculture marketing. The authors argue that the use of web and mobile-based technologies can help to create a more efficient and sustainable agriculture industry by enabling farmers to reach a wider market and reduce waste. System described in paper [3] is developed by considering farmers from different states who may be illiterate. This system tried to solve the complex interface problem that was there in the previous paper. The system in paper [3] provides a user-friendly iconic interface. However, the system [3] failed to provide multiple local language support and also only, a large screen interface is available in the system; a small screen interface is missing.

The article "Agro App: An application for healthy living" by Aggarwal et al. [4] describes the development of a mobile application designed to promote healthy living through the consumption of locally-grown, organic food. The authors argue that the application can help to bridge the gap between farmers and consumers by providing a platform for direct communication and interaction. The system in the paper [4] provides information of crop's rates in local as well as distant markets. The system also provides weather forecasting information.

[5]"iFarm: Development of Web-Based System of Cultivation and Cost Management for Agriculture" by Murakami describes the development of a web-based system designed to assist farmers in managing their crop cultivation and costs. The system is intended to provide a simple and user-friendly interface for farmers to input data and receive real-time feedback on their crop management. The iFarm [5] system offers several features, including a crop management module for tracking cultivation data, a cost management module for tracking expenses and revenue, and a marketing module for connecting farmers with potential buyers. The system also includes a weather forecasting feature, which can help farmers to plan their cultivation strategies and mitigate the risk of crop failure due to adverse weather conditions.

As discussed in the article "Impact of Information Technology in Agriculture Sector" by Sami Patel and I U Sayyed [6], IT has had a significant impact on the agriculture sector. The authors highlight several ways in which IT has revolutionized the agriculture industry. Overall, the authors argue that IT has transformed the agriculture industry, providing farmers with the tools and resources they need to improve productivity, reduce waste, and reach new markets. As technology continues to advance, the authors predict that IT will play an even more significant role in the agriculture sector in the future.

[7] "Design of Web Portal for E-Trading for Farmers" by Vishi Purushottam Paliwal et al. describes the design and development of a web portal aimed at facilitating e-trading between farmers and buyers. The authors of this article [7] also highlight the importance of educating farmers about e-trading and providing them with the necessary training and support.

The paper [8] "Survey Paper on E-Mandi A Market Exchanging Between Farmers and End-user" by Sheetal Bhagwat et al. provides an overview of the concept of e-mandi, a web-based platform for connecting farmers and end-users in the agricultural market. The authors in [8] argue that e-mandi has the potential to address several issues faced by farmers and end-users, such as price volatility, limited market access, and lack of transparency. Overall, the paper provides valuable insights into the potential of e-mandi to transform the agricultural sector in India and beyond.

The article [9] "A Study of Blockchain Technology in Farmer's Portal" published on IEEE Xplore explores the potential of blockchain technology in the context of farmer's portals. The authors propose a blockchain-based farmer's portal architecture that integrates various components such as smart contracts, digital identities, and data storage. The article [9] also discusses the potential benefits of this architecture, such as increased efficiency, reduced costs, and improved data security and privacy.

III. PROPOSED SYSTEM

The system proposed would make the marketing of the agricultural products easy and beneficiary from a farmer's as well as buyer's perspective. The system is developed using CSS, JavaScript, PHP, MySQL as a web application that has both large screen interface and also small screen interface. Both the farmer and end user are required to login to the system by entering all required details to get access to features. The information entered by farmer about his products gets stored in the database. All the information of the farmer along with his product, price, location and contact number will be displayed to the end user during purchase. This system also provides multi-language support to make it more user friendly and accessible in any local language. The developed system will help farmers to get better price for their product and increase their income.

In Figure 1. the block diagram of the proposed system is explained. It involves three actors namely admin, farmer and consumer. The farmer and the buyer would have the username and the password on successful registration. To enter the product information farmer should login with the right credentials. The customer can select any product available that they need and place order. All the current news and updates related various products or agricultural fairs going on would be displayed on the portal. Also, the list of ongoing current market rates of the particular products will be available on the portal. Hence this portal will be a benchmark to all the producers to increase their profits and as a result the economy of our country would rise.

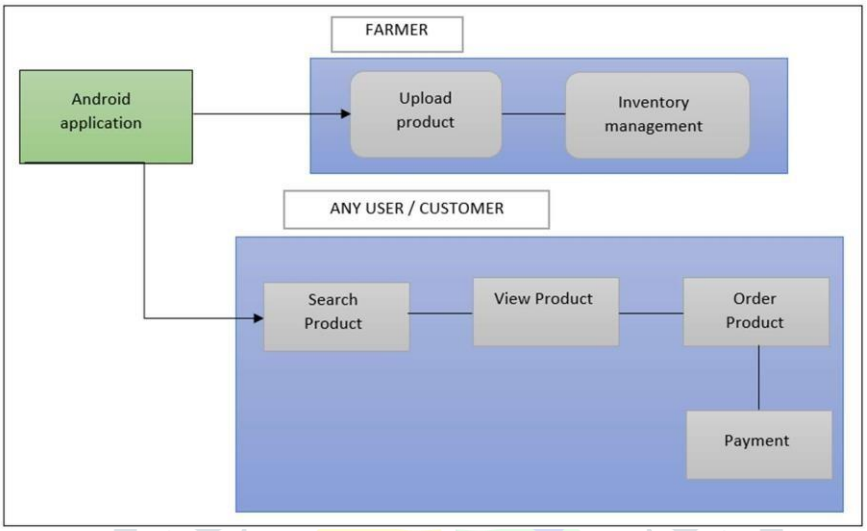

Figure 1. Block diagram of proposed system

IV. RESULTS AND DISCUSSIONS

Actual screenshots of the proposed are shown in following figures. This screenshot depicts how actually the design of website looks and functions.

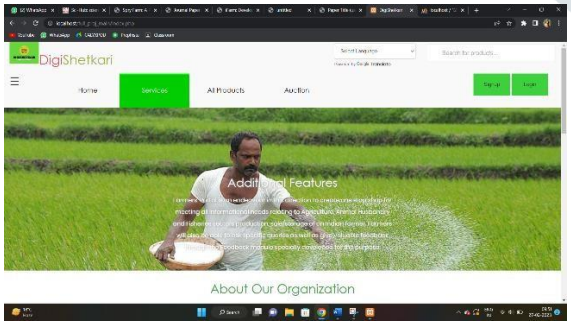

Figure 2. Home Page

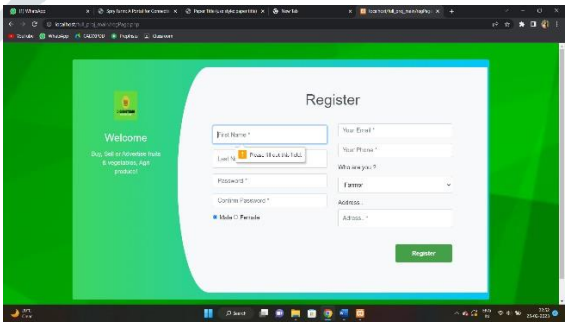

Figure 3. Registration

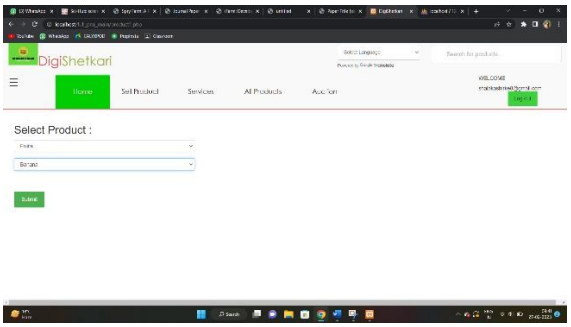

Figure 4. To add products by Farmer

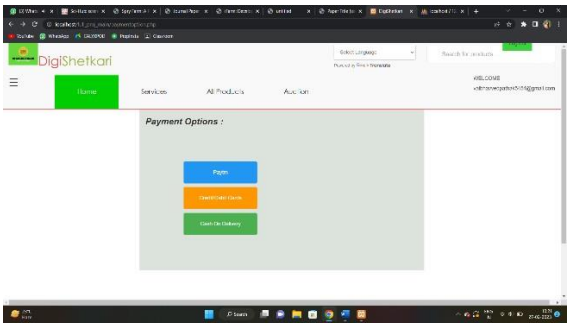

Figure 5. Payment methods

Following Chart 1 represents the comparison of price of various products between traditional method and the method using this portal. Whereas chart 2 shows the comparison between the profits earned by the individual farmer in traditional method and proposed method. Thus, by comparing these 2 graphs, it can be concluded that the overall profit gained by the farmers is increased by 5%. Hence connecting farmers and customers directly is completely beneficial.

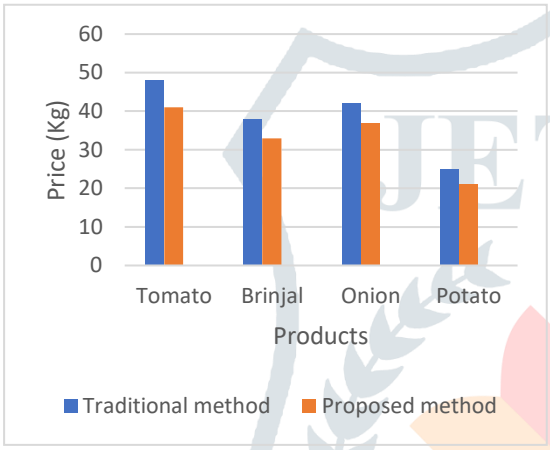

Chart 1. Price Comparison

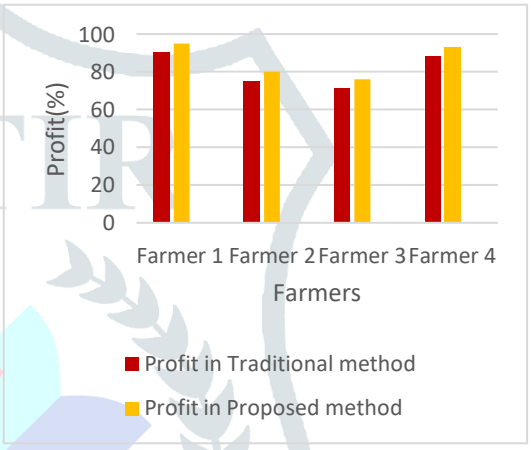

Chart 2. Profit Comparison

V. CONCLUSIONS

Hence, the system proposed in this paper connects nearby locality farmers to customers from urban and rural areas. It is a reliable and is user friendly application. Through the portal, fresh products can be obtained and people can explore many parts of their surrounding villages and purchase the products directly from the farmers and as a result the expenses to both farmers and customers are reduced and the profit is increased. The conventional method which ends up with adding an intermediatory between the buyer and the farmer, so farmers didn't earn better rates. Much of the profit shares were taken by the intermediatory parties. Hence the system moves from traditionally used system for ecommerce to a newly and highly effective system which makes the farmers live with pride.

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