Farmer Portal System using MERN Stack

Sanjivani Bagade[1], Megha Bhatt[2], Shital Gondhali[3], Prof. Vilas Jadhav[4]

[1,2,3]*Student, Dept. of Computer Engineering, M.G.M. College of Engineering and Technology, Kamothe, Maharashtra, India*

[4]*Prof. Dept. of Computer Engineering, M.G.M College of Engineering and Technology, Kamothe, Maharashtra, India*

---***---

Abstract - *Agriculture is undoubtedly an important part of our livelihood. India, which is the second-largest producer of agricultural products in the world, produces more than 280 million tons, contributing to more than 15% of India's GDP. But there are many problems that farmers have to face. Many of the farmers are going through a tough phase as people are not giving priority to farming due to which production is decreasing. During farming, farmers have to face plenty of problems due to lack of contacts and knowledge farmers don't get the idea of how to sell the product or how to do farming using modern methods as they are not having enough knowledge of technology. Many of the times farmers sell their product to middlemen at a low price and middlemen sell them at a high price in market or malls due to which farmer goes into a loss this is the major problem of farming. due to lack of knowledge farmers do framing using old traditional methods and use old traditional tools which cause wastage of energy and it becomes a very time taking process.*

***Key Words:* Transparency, MERN, Agriculture, Third Party, Web Application, Farmer.**

1. INTRODUCTION

As we step forward into the current modern era of technology, we can find many engineering related applications very beneficial for improvements into the society. India is an agriculturally based Country where mostly people tend to do farming. Since it is a primary occupation in India there are lots of agricultural products yield every year on different places all over in India. The system aims to accomplish the farmers needs and to make them fully independent in financial terms. In today's date there is no such thing which is useful for their betterment is sad truth is Indian farmers are most ignored even if we called it as a country of farmers. The term E- Agriculture is a stage for support farmer products and to sell the products directly to the buyers without any involvement of any third party. Farmers will get the full price of their selling without any cut in cost. Also, this will help to buyers to get the product at market value and cheaply. Involvement of third part adds on additional cost to every selling products.

To make farmer- consumer relation far better with good estimation value of product as well as fresh direct delivery of product up to certain distance. Because in India we follow a supply chain of farm product making things too much indirect for the farmers due to which the farmer still reaming poor and the intermediates are gaining profit which ultimately makes them rich. So, in order to break that supply chain of indirect sales, we can make use of this application so that the farmer can be connected directly to the customer and the selling can be done accordingly. Since the farmer will be dealing with the customer directly so the prices of the products offered by the farmer to the customer will also be affordable to customer, which will help both the farmer and the customer where the customer can save some money and the farmer will gain extra profit that he deserved.

2. EXISTING SYSTEM

In today's world there is much need of such platform which would be really helpful for the farmer to sell their agricultural products. In this system we added farmers & consumers for the better and direct communication between them. As of also added NGO for prevention of food wastage. E-mandi is one application which under banner of Indian Government it showing up the rates of crops all over and giving an idea about rate of crops to all farmer using that application [1].

Currently, the farmer goes to nearest market handover his product to a particular agent, agent ask the farmer to visit the market after a specific time to collect the cash earned out of the sold product. Agent sells the product to another agent or a dealer at the cost of that market. Every Agent tries to cuts his commission out of that. There is no way for farmer to know about the deal and the exact amount at which their product was sold.

There is no transparency. No facility is present for the farmers to know the product rates at different markets where they can sell their products for achieving high profits. Many times, farmers are not even aware of the schemes and compensation provided by government. In spite of all the opportunities banging the doors the farmers are not able to benefit out of those. Current system does not provide the way of e-learning for farmer that will provide the knowledge of new techniques in farming. So, he doesn't get the maximum profit through the current system [2].

1.2 OBJECTIVES

The main aim of this web application is to make a direct connection between customers and farmers which will be profitable for both customers and farmers. As most of the

farmers lacks knowledge regarding new tools and technologies due to which there is loss of manpower and wastage of time.

The objective of this project:
- Creating a bridge between farmers and customers
- Easily accessible site
- Doubt solving chatting box
- Rating, comment and review option

2. SCOPE

The Farm and livestock related interventions are found to be a successful strategy for poverty alleviations all over the world and large percentage of rural population depend on livestock rearing to earn their livelihood. Farming is a major livestock enterprise in India, where small and marginal farmers are engaged to earn their livelihood.

The main scope of our project is to improve the growth of the farm producers and consumers relation. In our web application the big level of farm owners only will not be satisfied. It supports Both small level and big level of farm owners also benefited. We improve the economic status of both small and big level of farm owners. We want to destroy the poverty of the farm owners. This System will help farmers to sell agricultural products in convenient way and easy to use application for consumers.

3. LITERATURE SURVEY

There is limited access to the market information, literacy level among the farmers is low, multiple channels of distribution that eats away the pockets of both farmers and consumers [3]. Climatic conditions directly affect the performance of crops [4] and are therefore of principal importance. Crop losses due to pests and diseases are a major threat to incomes of rural families and to food security worldwide. There is a need of the decision support system for the farmer for the high yields to be produced benefitting the farmer. This can be achieved when there is proper knowledge about the environmental conditions, Market Conditions and knowledge about the timely planning of Agricultural Activities. Project Aims at the solution of all the above-mentioned issues by using a web portal.

SMART KRISHI- SMART KRISHI offers location-based services to the farmers. It includes weather forecasts, search for nearby farming related services, services for hiring laborers and farming tool and much more. The system aims to reduce farmer's work load, ease his daily work and thus ultimately increase the crop produce. Firebase is used for authentication and real-time database which provides the facility of backend services. For getting nearby location, the system uses standard zip-code database which provide latitude or longitude of zip-code and other information [5].

[1] Alan M Goldberg (2016) Farm Animal Welfare and Human Health: The paper examines the relationship between farm animal welfare, industrial farm animal production, and human health consequences. The data suggest that when the animal welfare of land-based farm animals is compromised, there are resulting significant negative human health consequences due to environmental degradation, the use of non-therapeutic levels of antibiotics for growth promotion, and the consequences of intensification. This paper accepts that even if meat and fish consumption is reduced, meat and fish will be part of the diet of the future. Industrial production modified from the current intensified systems will still be required to feed the world in 2050 and beyond. This paper identifies the concept of sustainable intensification and suggests that if farm animal welfare is improved, many of the human health consequences of intensified industrial production can be eliminated or reduced. In water-based farm animal production, many new systems are resulting in a product that actually protects the environment and can be done at industrial levels without the use of antibiotics [6].

4. SYSTEM ARCHITECTURE

4.1 Design and Architecture

We describe the Algorithm, which is used to explain how the system is going to work, i.e., the process logic behind it, the flowchart, which represents the pictorial representation of the process logic and finally the Data Flow Diagram.
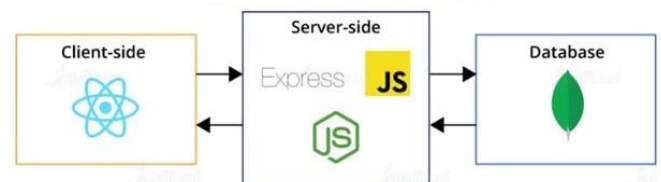

Fig-1: System Design

4.2 Algorithm

There is no need of login for normal user who has the curiosity to know about the market information and different schemes. Farmers who want to perform marketing and apply for schemes must have the login username and password. Along with farmers, the agent which will perform the selling of farmer's product must be authorized through the market committee for their license of marketing and after authorization, they will be given authorized agent ID and password.

During authorization, Farmer need to provide his bank account number, names of product, his personal details, etc. This information can be used for various purposes of marketing. Once availed with the username and a password for the website the users can perform different operations

like marketing, viewing the account information, checking the fund transfer after a sale.

We improve the economic status of both small and big level of farm owners. We want to destroy the poverty of the farm owners. This System will help farmers to sell agricultural products in convenient way and easy to use application for consumers.
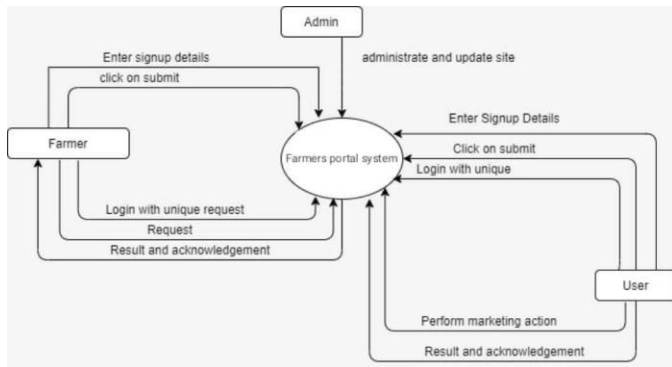

Fig-2: System Architecture

4.3 Flow Chart

The diagram has shown below gives some basic description regarding the flow of the system. It will give an overview of the operations performed and where it goes after the operation has been performed. It shows the different conditions like ("if else") if one condition is not true then where the flow will return and from where will it start again or where will the flow terminate after some operation has been performed.
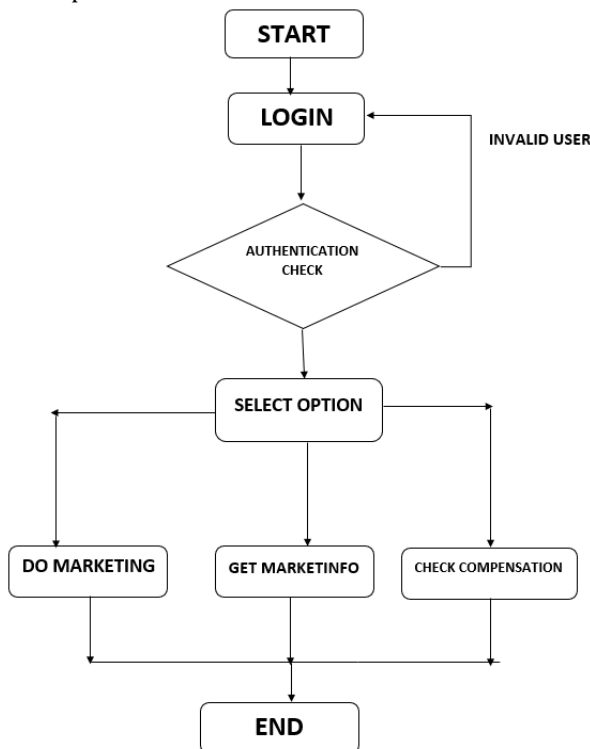

Fig-3: Flow Chart

5. METHODOLOGY

Following are the basic modules in the project:

Account Generation: It includes the creation of account, in which basic information of user, type of user, whether he is farmer, agent or Gov. Officer is submitted. Through this module, user gets the Unique ID which serves as the identity of user.

Marketing Pricing & Values: It includes Pricing, Billing and the Fund Transfer. Pricing will show the farmer at what price his commodity has been sold. Billing will create the bill after getting request from farmer for bill creation. Created bill will be displayed on the page. Bill will consist of unit price rate, total bill amount, commission of agent, vehicle fare, other expenditure, etc.

Market Information: Farmer can see the market information of nearby market sales. This will consist of selling rates of different product, today's turnover, product-wise details like quantity, grading, selling cost, etc. It will give commodity-wise, market-wise daily report, commodity wise price during last week, community transaction below MSP (maximum sale price), date wise prices for specified community. Farmer can also search for specific product in particular duration of specific market.

Schemes: It lists all government schemes related to particular product and area and can apply in the same way as for compensation.

5.1 Functionalities

Response sequence:
1) Add details of product and get order from consumer
2) Place order -send request to farmer
3) Delete food as per time/limit

Farmer Function:
1) Upload vegetable details
2) View notification
3) Accept/reject order

Consumer Function:
1) Get all details of product
2) Send request and place order

5.2 Result & Output

1) Farmer will be able to add agricultural products.
2) Farmer will be able to purchase good and equipment's needed.
3) Consumers will be able to receive the products they purchase at a desirable market value.

6. DRAWBACKS OF SYSTEM

1) Lack of equality to access the internet in rural areas.
2) Reliability of information on the web.
3) Technophobia of new users

7. ADVANTAGES OF SYSTEM

1. Without registration the user is not allowed to take any actions on the portal system like buy, sell and watching anything related to farming, so user must do the registration at first after that they will get benefit of it.

2. Generally, most of the farmers don't have that much idea about how to use chemicals or fertilizers in farming or for which plant how many dosages of that fertilizer is required but by using our farmer portal system they will get all the detailed information about all pesticides which are used in agriculture area.

3. The users which are going to use this farmer portal system, their data will be recorded so in case if any farmer is getting confused about which pesticides or fertilizers, they have used in their farming so they will easily get information about that thing like what they have used. So, record keeping advantage will be maintained here.

8. FUTURE WORK

1. Actually, we are not going to give the practical knowledge in real, we will provide only videos related to how to plant and some actions related to plantation, if someone is going to do the farming from first stage, so to get good experience it will take large time.

2. Because of the Lack of practical knowledge, the farmers can't handle the machines properly. At first stage, they will never know how to handle the pesticides pump and other equipment's. So, in some cases it will turn into the injuries by machines and pesticides pump.

9. CONCLUSION

Through this project we are creating farmer portal system a web application which will help farmers to directly connect with seller. As farmers are selling product to middlemen in low price and middlemen sell it in market in high price due which farmer goes into loss. This is a user-friendly web application which will help user to easily find the products and buy it in reasonable price so neither farmer goes into loss nor customer and there will be no middlemen concept. Also, we are deploying a chatbot so that if customers have some doubts that can be cleared using chatbot. So, this is helpful for both farmers and customers.

REFERENCES

[1] Prof.P.B.Gaikwad, Pallavi Malode, Pooja Pawar, Sangita Darade, "E-Farming an Interface for Indian Farming", International Research Journal of Engineering and Technology (IRJET), Volume: 02 Issue: 08 | Nov-2015

[2] Sindhu M R, Aditya Pabshettiwar, Ketan.K.Ghumatkar, Pravin.H.Budhehalkar, Paresh.V.Jaju," E-FARMING", (IJCSIT) International Journal of Computer Science and Information Technologies, Vol. 3 (2) , 2012,3479-3482

[3] "Problems And Prospects Of Agricultural Marketing In India: An Overview", Issn 2249- 8516

[4] Chen Cc, McCarl BA, Schimmelpfennig DE. "Yield variability as influenced by climate: A statistical investigation." Climate Change. 2004;66:239–61.

[5] Chen CC, McCarl BA, Schimmelpfennig DE. "Yield variability as influenced by climate: A statistical investigation." Climate Change. 2004;66:239–61.

[6] Dharmila P, Monisha P, Kokilavani, Bhuvaneshwari, Dr.S.Radha," Domestic Farm Portal", International Research Journal Of Engineering And Technology (Irjet), Volume: 08 Issue: 03 | Mar 2021