AGRIBUZZ- SMART AGRICULTURE MANAGEMENT SYSTEM

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ABSTRACT

India’s farming industry has problems because it doesn’t use enough current techniques and technology. As a result, most of the people who work in agriculture are poor. Farmers can also be taken advantage of by market agents, which hurts their finances. The AgriBuzz system could be an answer. It is a clever tool for agriculture that simplifies processes and makes an effective online marketplace. Farmers can access a national market through AgriBuzz, which gives them more power and helps them make better decisions by giving them real-time market information about prices, sales, and income. The platform also has tools for teaching advanced farming techniques, plans, and reward programs for sustainable growth. By putting all the information about farmers in one place, AgriBuzz makes it easier for buyers to talk to and work with farmers, and by making inventory management easier, it makes the best use of resources. Real-time alerts make sure that resources are used well and that decisions are made with the right information. Overall, AgriBuzz offers a new way to improve India’s farming sector and help farmers get out of poverty by tackling the biggest problems that have been holding the industry back.

Keywords: Agriculture, Farmers, Modern Procedures, Automated Machinery, Poverty, Market Access, Intelligent Agriculture.

I. INTRODUCTION

The Agriculture has been India’s primary source of income for countless generations, making it possible for millions of people to maintain their standard of living while also guaranteeing that the country’s massive population never goes hungry. In spite of the importance it plays, the agricultural industry continues to struggle against considerable obstacles that slow its growth. One of the most important issues confronting the business is the delayed adoption of current methods and automated technology. This impedes progress in contrast to other industries, which is one of the most major challenges facing the industry. Despite the general trend toward further technical development, the agricultural community in India is now suffering with the use of out dated methods and has limited access to contemporary facilities. This is despite the fact that technology innovation is increasing globally.

As a direct result of this, the majority of India’s labor force, which is made up of hardworking farmers, continues to struggle financially and lives in deplorable poverty. When there is a lack of understanding of modern agricultural methods as well as access to such techniques, there is a corresponding decrease in the levels of productivity and revenue that may be achieved. In addition to this, unscrupulous market brokers often take advantage of farmers, making the already challenging life of farmers even more challenging.

The AgriBuzz system promotes itself as a game-changing solution that has the ability to totally alter the agricultural sector in India in order to tackle the big problems that have been found. This would be done in order to address the considerable challenges that have been identified. AgriBuzz is a cutting-edge online application that was built to equip farmers with the tools and resources they need to thrive in this digital age. The goal of the project was to make AgriBuzz available to as many farmers as possible. The platform functions as a model farmer management tool, giving farmers the ability to circumvent the restrictions of their immediate market and gain access to a wider, more diverse consumer base throughout the country.

Farmers may easily market their agricultural goods online with the use of AgriBuzz, which allows them to access customers from a wide variety of areas and backgrounds. Farmers are given the ability to make choices based on data on the price of their product thanks to the platform’s provision of essential real-time market
agricultural practices and developments. This gives farmers with the tools necessary to increase production, adopt sustainable practices, and maintain competitiveness in an agricultural world that is always changing.

In addition to the market for agricultural goods more effective, AgriBuzz simplifies a variety of areas of farm management. The platform encourages effective communication and cooperation among all of the stakeholders by acting as a single repository for farmer information. Farmers are able to maintain detailed profiles, which makes it easier for them to connect fluidly with both consumers and suppliers.

A complete inventory management function is also included in AgriBuzz, giving farmers the ability to keep track of and make the most of important resources such as seeds, fertilizer, and equipment. Notifications received in real time guarantee that resources are used effectively and that decisions are made on time. Additionally, the platform has financial monitoring component, which assists farmers in keeping accurate records of transactions linked to their agricultural operations. This contributes to improved financial management and planning, as well as better overall financial management.

II. LITERATURE SURVEY

- Several types of writings were looked at, and the problems that came up when the manual method was used in the Aflao Ketu South Municipality were shown. Innovations in technology and innovation can be used to share knowledge about farming and make life better for farmers and everyone else. Traditional farming is turned into modern farming by the use of ICT. By 2050, the world’s population is projected to be over 9 billion. To meet this extra demand for food, farm production will need to rise by 60• This project shows that goods can be sold online by Agricultural. Agribuzz is a website program that helps farmers run their farms. This project helps farmers sell their crops online and gives them advice on how to farm in the best way. So, by giving them access to a bigger market and helping them not just sell in their local area. This means that farms and stores can grow their businesses. Working in the cloud: Cloud computing is a type of spread computing that has been getting better lately. The cloud sign is often used to stand for the Internet. People now often use the term “cloud computing” to talk about how software, hardware, and storage services are given over the internet. Cloud computing gives you tools and technologies that can be used in a number of parallel projects at prices that are much lower than traditional parallel computing methods. The main goal of cloud computing is to take advantage of all these technologies without having to know a lot about them or be an expert. At the moment, all businesses, big or small, use public cloud platforms to store and run their apps. This is because public cloud platforms are flexible, mobile, scalable, sustainable, and cost-effective.[2]

- According to Mishra et al. (1999) and Muhammad etal. (2004), The competent and meticulous administration of contemporary farms is one of the factors that contributes the most to the success of these types of operations. The only way for a farm to generate the required resources to finance its continuous existence and, eventually, its sustainable expansion in today’s fast changing environment is for the farm to have strong management. This is because good management is the only method for a farm to make money in today’s climate.

- However, sophisticated management is a time-consuming and challenging endeavor that has to be organized in the most efficient manner possible (Forster, 2002; Doye et al., 2000).[3] Having Farm Management Information Systems (FMIS) that are not only accurate but also easy to use is of the highest necessity when it comes to the proper operational management of farms. When it comes to the day-to-day operations of their enterprises, the vast majority of farmers still do not make use of farm management information systems (FMISs), despite the rising degree of competence in the agricultural industry as well as the greater usage of various forms of information technology. This research paper focuses on functional farm management information systems (FMISs) for multifunctional farms as its primary topic of discussion. These farm management information systems (FMISs) provide assistance to farmers, allowing them to more effectively and efficiently manage their farms.[4] When people speak about e-agricultural, what they mean is the use of information technology to enhance or improve agriculture with an emphasis on innovations to achieve higher
production. This is what is meant by the term "e-agricultural." EAgriculture, also known as electronic agriculture, is a management strategy for farms that makes use of information technology (IT) or information and communications technology (ICT) tools to facilitate the simpler cultivation of plants and raising of animals. The agricultural industry is undergoing a sea change, transitioning from a basic producing sector to a more multifunctional one. Only via the use of information technology and other forms of information and communications technology (ICT) in agriculture will it be possible to accomplish the overarching goal of improved productivity as well as an increase in profits generated by agricultural goods. In the Volta region of Ghana is where you’ll find the sizable town of Aflao Ketu South Municipality. The municipality does not currently have any kind of agricultural management system in place. It is tough for the farmers to acquire regular access to wholesalers who are willing to purchase agricultural goods. The e-Agriculture management system will collect data on agricultural goods, analyze those data, and then periodically communicate information about those items to wholesalers.[5]

III. METHODOLOGY

System Architecture
A well-structured front-end interface, a set of back-end services, a robust database, integrations with external data sources, educational resources, resource planning and optimization modules, notification systems, security measures, scalability considerations, and analytics capabilities are all components of AgriBuzz’s system architecture.

![Data flow Diagram](image)

Fig. 1. Data flow Diagram

AgriBuzz will serve as an efficient and effective platform thanks to its complete design, which will empower farmers and drive the expansion of India's agricultural industry.

Proposed System
The position of farmers in India in the present day is one that is fraught with risk. This illness may have been brought on by any one of a great many different factors. One of the reasons for this is that the crops have been infected with a wide range of diseases, and another is that there has been an abrupt change in the weather. The weather is subject to natural oscillations that cannot be prevented; nevertheless, the consequences of these changes may be lessened to some degree and should be taken into account while planning outside activities. This problem may be fixed by using the system known as AgriBuzz, which has been suggested as a solution. Farmers are welcome to make advantage of the location-based services that the AgriBuzz system has to offer. It offers weather predictions, the capability to search for agriculturally-related services in the nearby region, services for hiring workers and farming implements, and a great deal of other services as well.
The effort of the farmer should be reduced, the farmer’s regular labour should be made simpler, and the farmer should finally see an increase in the quantity of crop that he produces thanks to the system’s implementation. Firebase takes care of authentication in addition to maintaining a real-time database, and it also provides the added convenience of backend services.

In order for the system to establish the position of anything that is nearby, it makes use of a standard database that stores zip codes. This kind of database may provide the latitude or longitude of a zip code in addition to other information. A process known as web scraping is used by the technology in order to gather data from the website maintained by the government and include it into our own website.

- **Real-time Monitoring:** The system is meant to gather data on a range of parameters, such as soil moisture, temperature, humidity, and crop health, and it does so by integrating sensors and Internet of Things devices positioned across the farm. This allows the system to collect data in real time. Farmers are given the capacity to remotely monitor the condition of their crops by virtue of the fact that this data is sent to a centralized platform in real time.

- **Decision Support System:** The system that has been proposed provides farmers a user interface that is not only easy to grasp but also simple to use, and it also gives farmers specific information on the condition of their farms. It gives farmers the opportunity to make choices based on data and respond in a timely way in order to avoid risks and maximize yields by providing them with visualizations, reports, and alerts. The farmers have more authority over the operations of their farms as a result of this.

- **Crop Planning and Management:** The system offers support to farmers in the process of crop planning, including the selection of suitable crops based on the conditions of the climate and soil. This assistance
is provided to farmers as part of the crop planning and management feature. In addition to this, it provides tools for efficient resource management, which aid farmers in optimizing their use of water, fertilizers, and pesticides in line with the needs of the crop. This is made possible by the data collected by the system.

• **Weather Predictions:** Being able to predict and prepare for upcoming weather occurrences is made possible for farmers when weather data and forecasts are included into the system. Because of this, they are able to alter their agricultural operations and take precautions against any hazards, so assuring that their crops will have the greatest possible results.

IV. CONCLUSION

The AgriBuzz system is a game-changing innovation as it carries the possibility of usher in a new age of economic growth and environmental responsibility for India’s agricultural industry. The platform equips farmers with the crucial tools, information, and access to marketplaces that are necessary for them to prosper in today’s world that is always changing by addressing the key challenges that are faced by farmers.

One of the most significant advantages provided by the platform is the ability of AgriBuzz to broaden farmers’ access to markets. Farmers may display their wares on an automated internet platform, allowing them to sell their produce to buyers in different regions of the nation rather of being limited to selling just in their immediate vicinity. Farmers and buyers alike stand to profit from the democratization of market access, which in turn helps to promote an agricultural supply chain that is both inclusive and effective.

In addition, the availability of real-time market information by AgriBuzz enables farmers to acquire critical insights that empower them to make educated choices about their product. Farmers are able to improve their pricing strategies and, as a result, maximize their returns when they are armed with information about the current market rates, sales patterns, and profitability.

AgriBuzz is not only a platform for gaining access to markets; in addition, it functions as an information hub for farmers. Farmers are given the chance to engage in modern farming techniques that are also environmentally friendly by offering them access to instructional resources on cutting-edge agricultural approaches that are hosted on the website. This not only boosts productivity but also helps make Indian agriculture more environmentally sustainable as a whole.

The information of farmers has been centralized via AgriBuzz, which promotes effective communication and cooperation among farmers, which is to the advantage of both the farmers and their clients. In addition, farmers are able to properly manage resources thanks to the inventory monitoring function of the platform, which ensures maximum efficiency while minimizing any unnecessary waste.

In addition, the incorporation of a financial monitoring component gives farmers the ability to exercise more financial management, which is a significant benefit. The financial stability of farmers is improved as a result, and they are better able to make choices about expanding their operations and making investments.

In conclusion, the AgriBuzz system represents a paradigm change in Indian agriculture, as it embraces technology improvements to provide farmers with more power and to accelerate the expansion of the industry. AgriBuzz has the potential to improve the lives of millions of farmers in India because to its extensive feature set and intuitive user interface. As a consequence of this, India’s agricultural landscape may achieve new heights of both economic development and environmental consciousness. Because AgriBuzz paves the way for a more technologically driven, data-enabled, and inclusive agricultural industry, it holds up the possibility of a brighter future not just for farmers, but also for the nation as a whole.
V. REFERENCES


