IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Agriculture Development Using Blockchain Technology

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Abstract: There is no adequate yield from the majority of Indian agricultural fields since they are divided into little acres of land. This is due to the crops being grown on small plots of land, which results in less crop production. The goal of this project is to combine small agricultural plots into larger agricultural plots. The farmers will gather together and consolidate the nearby properties. Once they sign a contract with the farmer organisation, agricultural machinery suppliers will also become a member of the group. Farmers might get financial assistance as well. The financial support may come from banks, businesses, and government initiatives. The industries will come to a deal, offer financing, and also purchase their goods or products. farmers will access

I. INTRODUCTION

A. Motivation

Farmers are the most crucial link in the network, yet they are not compensated fairly due to knowledge asymmetry. Farmers frequently have no idea if the inputs they purchase are real. To boost their profit margins, a few small businesses are selling bogus goods to farmers. Consumers and suppliers alike are completely uninformed of the precise processes involved in the entire agriculture industry. One of the key components of agriculture is marketing. This marks the culmination of the agricultural process. By addressing the issue of product traceability, blockchain technology will address these issues.

B. Objective

Our final project is hoped to develop a platform to fulfill the following objectives

1) New Technology acceptance: Although technology is advancing daily, the agricultural industry has a lower acceptance rate than other sectors.
2) Farmers Make Money From Investments: At the moment, farmers do not make enough money to cover their basic necessities. This is because they have to make additional investments in agriculture, including money for buying seed, fertiliser, storage, and even marketing. But this may be fully eliminated by utilising our platform. Since they are organised into a group, the benefit from their agriculture may be allocated fairly, and they can get the desired profit margin.

3) Marketing: However, during this time, it is also challenging to market the produce that has been grown in the land fields.Since a farmer must use a middleman to sell a crop, the middleman will keep 10–20% of the farmer's profit as commission.and in a farmer's life, the middleman has taken on a harder role.

4) Making Investment In Agriculture Simple And Efficient: Since many investors are interested in those sectors where they will make a small amount of profit, they will not express interest in investing in the agriculture sector because this is the sector where they will not make the profit they are expecting.However, if there is greater profit in the agricultural sector, more investors will attempt to invest, and additional private and public companies/parties will join to invest in the agricultural areas.

II. SYSTEM ANALYSIS

A. Existing System

Farmers are currently receiving loans from the government and other financial institutions. Farmers who have limited farmland are utilising this financing in a traditional manner rather than for the adoption of new technologies.Drawbacks Of The Existing System

The primary flaw with the current system is because

a) Farmers do not profit fully from all government measures.

b) Some of these policies fall short of what is required.

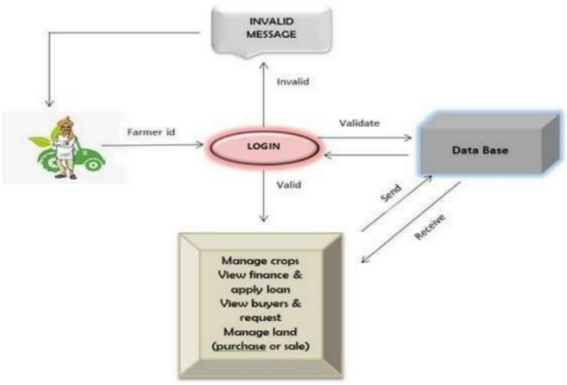
c) Every system that is accessible is corrupt

d) Does not guarantee complete security.

B. Proposed System

In its most basic form, a blockchain is a collection of computers that manage an immutable, time-stamped record of data that is not owned by any one company. These data units (i.e., blocks) are each encrypted and linked to one another using cryptographic concepts (i.e., chains). Decentralisation, immutability, security, and transparency are the four main benefits of blockchain technology. With the use of this technology, verification can be done independently of external parties. Farmers need to have trust in one another for lands to be integrated. They can develop trust by using this technology. Following the highest trust verification process, all transactions and data are connected to the block. All ledger participants agree on the information that has to be entered into the block. Participants in agri-commerce may benefit from faster and less expensive payment methods provided by blockchain.

The farmers receive government funding. But little areas cannot be used by farmers with them. Therefore, we are combining these little areas with large holdings. This makes it possible for farmers to cultivate using new technology. Farmers that have a few small fields for farming get together and register themselves here. Additionally, it boosts confidence in the pay and yield. Some middlemen can be fully avoided. The amount of financial assistance will depend on the things they manufacture. Given that they are being used in numerous industries, the new technologies can be used. By providing some financial assistance, marketing agencies or factories can enter into a contract with such organisations and obtain the products they want. These organisations will be contacted by the factories, who may then request a specific product. They can assist farmers financially by buying their goods at reduced prices. There are precise records that can be used to identify the true owner and these data cannot be falsified.



Farmer Module Design

III. CONCLUSION

Additional changes and enhancements to the blockchain have been made and will be made in the future, including different implementation strategies, increased effectiveness, increased scalability, and conceptual advances. For the foreseeable future, it is essential to continue researching Blockchain development and use in various fields because this new technology can assist in resolving numerous challenging issues that are obstructing and impairing the proper operation of systems. We will learn how it can be put into practise in the following section.

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