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Blockchain Technology for Agriculture Development

Vinay A¹, Rangaswamy J², Santosh Bhiradi³, Vinay V⁴, Prof. Madhusudhan G K⁵

^{1, 2, 3, 4}Students, Dept. of Computer science and Engineering, Vidya Vikas institute of Engineering and Technology, Mysore, Karnataka, India

⁵Professor, Dept. of Computer Science Engineering, Vidya Vikas Institute of Engineering and Technology, Mysore, Karnataka, India

Abstract: Since most of the Indian agriculture lands are divided into small acres land, there is no proper yield from those lands. This is because the crops are cultivated in small lands which yields in decrease in the amount of crop production. This project is about integrating small agriculture lands to form large scale lands for cultivation. The farmers will form groups and combine the neighbouring lands. Agriculture machine providers are also be part of the group, once they make a contract with the farmer group. Financial support is also available to farmers. The finance may be from the banks, industries and also from government policies. The industries will make an agreement and provide finance and also buy their products or goods. Farmers will get to adopt new technologies and large machine.

I. INTRODUCTION

A. Motivation

Due to information asymmetry, farmers do not receive their due share, even though these are the most important part of the chain. Farmers are often unaware if the inputs they are buying are authentic. Few local level retailers are selling fake products to farmers to increase their profit margin. All the consumers and providers are unaware of exact process going on the whole agriculture process. Marketing is one of the main part in the agriculture. this is the end part of the Agriculatural process .Blockchain application will solve these problems by solving traceability of each product

B. Objective

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

- 1) *New Technology Adoption:* Technology is evolving in day to day life but its adoption in agriculture sector is low when compared to other sector.
- 2) *Farmers Obtain Profit In Investment:* Currently farmers are not getting sufficient profit for their daily needs,the investment in the agriculture is more it is divided into many parts like for buying the seed,fertilizers,storage and even in marketing also they have to invest for that. But by using our platform this can be reduced completely.since they are formed as a group the profit which they obtained by the cultivation can be distributed evenly and they can get the desired amount of profit percentage.
- 3) *Marketing:* But to market the crop which they have grown in the land fields is also difficult in this period.Because to sell a crop a farmer as to go through a Middle man who will take 10-20% of the commission which the farmer will get in his profit.and the middle man as become a hardel in the life of a farmers life.
- 4) *Making Investment In Agriculture Easy And Efficient:* Many investors are interested in investing in that sectors where they will get the handful of profit since the agriculture is the sector where they can not get the profit they are expecting they will not show interest in investing in the agriculture sector.But if the profit in the agriculture sector is more them more number of investors will try to invest and other private and public companies/parties will also join to invest in the agriculture fields.

II. SYSTEM ANALYSIS

A. Existing System

Currently, government and other financial agencies are giving loans to the farmers. Farmers with less land for cultivation are using this loan in traditional way instead of using them for implementing new technologies.

1) Drawbacks Of The Existing System

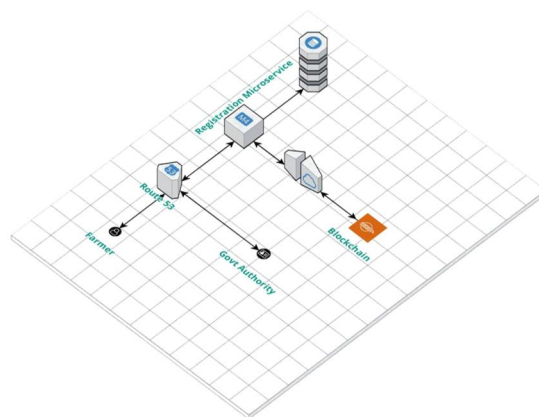
The main demerit of the present system is that

- a) Farmers are not getting all available government policies benefits.
- b) Some of these policies are not up to the needs.
- c) All the available systems are corrupted
- d) Does not ensure total security.

B. Proposed System

A blockchain is, in the simplest of terms, a time-stamped series of immutable record of data that is managed by cluster of computers not owned by any single entity. Each of these blocks of data (i.e. block) are secured and bound to each other using cryptographic principles (i.e. chain). The basic advantages of Blockchain technology are decentralization, immutability, security, and transparency. This technology allows for verification without having to be dependent on third-parties. For integration of lands, there should be trust among farmers. This technology can be used to build trust among them. All the transactions and data are attached to the block after the process of maximum trust verification. There is a consensus of all the ledger participants on what is to be recorded in the block. Blockchain can provide lower cost and faster payment options to agri-commerce participants.

The government funds are given to the farmers. But farmers cannot use them for small lands. So we are grouping such small lands to large lands. This enables farmers to use new technology in their cultivation. The farmers having small cultivating fields group together and register themselves here. It also increases trust about the yield and pay. Some intermediaries can be avoided completely. The financial aid will be received depending upon their manufacturing of products. The new technologies can be used since they are implementing it in large fields. The marketing agencies or factories can make a contract with such groups by giving some financial help and can also get their desired products. The factories will communicate with such groups and can ask for a particular product. They can also provide financial help to farmers by purchasing their items at cheap price. Accurate records are available that identify genuine owner and these records cannot be forged.



Farmer Registration Design

III. CONCLUSION

The blockchain has been and will continue to be the subject of further improvements and developments such as variations in its implementation, improving efficiency, improving scalability, and conceptual advances. It is necessary to keep exploring the Blockchain development and application in the different areas for the nearest future because this new technology can help to solve many difficult problems, which are disturbing and preventing correctly systems work. In the next part we will be knowing how it can be implemented.

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