

Title: Decentralized Traceability and Direct Selling of Agriculture Supply Chain

Introduction:

This project is to implement blockchain in agricultural supply chain to have transparency and traceability. This helps in selling of agricultural products without any fraudulence of middlemen and have food safety and quality.

Literature survey:

In the current food supply chain farmers need to depend on several third parties, which has many middlemen, for selling their product. But because of the fraudulence and corruption of the middlemen, the farmers are receiving less income than what they should get for their crops. The corrupted third parties are not only effecting the farmers but also the consumers as there is no transparency in the supply chain about the cost, quality and safety of the product. This is because of the centralized data storage where all the transactions and details are handled by a single thirdparty. These days even the consumers are wanting to have good quality of products, which is not happening because of the less traceability and transparency in centralised data storage. So we are proposing decentralised data storage which ensures transparency.

The challenges which we need to overcome in the present supply chain is lack of transparency, traceability, quality and safety. By intergration of IoT and Blockchain in the food supply chain we can have transparency and traceability which ensures the product quality and safety. We can have all the records about the transactions which are registered and stored in blockchain's unchangeable ledger. This is a more reliable, stable and efficient way store data.

Proposed system:

The proposed framework has 4 phases:

- 1.Farmer
- 2.Dealer
- 3.Sub-dealer
- 4.Consumer

All the details are added into the smart contract and it generates hashcode using sha256 algorithm. Each phase has previous phase hashcode, data and present block hashcode. Every

phase is connected by the previous phase hashcode. The price details are fixed by the government or a particular organisation and everyone needs to follow the fixed pricing. Each participant has a copy of blockchain to validate a particular transaction. But no one can change the price and details as blockchain is immutable so everytime the data changes the block generates new hashcode.

This helps the customer get appropriate price of the product and farmer can get a good price for his product or crops. Government can trace the price of the products and control corruption between brokers.

Conclusion:

By implementing the blockchain we can have transparency, traceability about the transactions in the supply chain, ensuring the quality and safety of the product without any fraudulence of the middlemen.