

# KisanCoin: The Future of Payments in Agriculture Industry

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**Abstract**— The agriculture industry has been prominent since before civilization was even adopted by Humankind. This industry has invented and has noticeably expanded in the last two decades due to technological advancements such as such as robots, temperature and moisture sensors, aerial images, and GPS technology. There are thousands of agriculture products website, magazines, farms and service providers in this sector. But the agriculture industry, however, continues to be an ‘underestimated’ world in India, which faces not only challenges from the industrial growth but also from many financial limitations which affect farmers and service providers simultaneously. This research paper is based on the impact on agricultural practices created by various ICO initiatives taken by research scholars and industrialists across the globe. In recent times the world has been ripping the advantages of peer-to-peer system adopted by the developers of Blockchain technology in various fields including education, trading, travel and tourism industry, shipping, and media industry. My aim is to examine the roadblocks of global policies of blockchain which is challenging the agriculture industry.

**Keywords:** Blockchain, Cryptocurrency, Kisancoin, Agriculture, Farmers, Agriculture Startup, Digital Currency For Farmers

## I. INTRODUCTION

The world has been witnessing enormous challenge when it comes to provide food to the masses. The challenges have impacts of various factors which includes climate change, floods, drought and desertification, loss of biodiversity and use of pesticides at large level. Information and communication technology in agriculture (ICT in agriculture), also known as e-agriculture has provided various opportunities to overcome some of the challenges faced in agriculture sector.

To promote the use of sustainable e-agriculture strategy, the Food and Agriculture Organization of the United Nations (FAO) has collaborated with International Telecommunication Union (ITU). The basic agenda of their collaboration is to use emerging technologies such as mobile-broadband access devices, the Internet of things (IoT), drones, smart networks, capacity for big data analytics and artificial intelligence; to provide some key tools and technologies to improve production and marketing processes.

One of the most sought technology for agricultural advancement is blockchain technology. The blockchain can be defined as linked chain that stores auditable data in units called blocks. It has unique capabilities for tagging, storing and tracking anything of value. Bitcoin, a blockchain based cryptocurrency is one of the most popular implementations of this technology.

Discussions about cryptocurrency is beyond the limits of this research, but blockchain has many purported use cases in scenarios that require an immutable ledger. It has the capability to disrupt all facets of our life from entertainment,

to education, voting, health data, share market, logistics, beyond.

As of today, there are more than 10 products which is trying to minimize the efforts of agriculture sectors but none of them has taken a combined efforts to simplify these in a single sphere. For insurance, Etherisc is building a platform. Their aim is to use blockchain technology to help make the purchase and sale of insurance more efficient, enable lower operational costs, provide greater transparency into the industry and democratize access to reinsurance.

To minimize the agriculture land issues, Fieldcoin Ltd has developed a crypto-currency protocol which aims at securing the ownership of land properties. Their team claim that the public registry of the land in many countries does not exist yet. So they are manufacturing a protocol based on blockchain which will ease the process of land property exchanges, costs and uses will become much faster.

The Singapore based Unnati Holdings has proposed MOOTOKEN. They are building a system based on Ethereum network, which aims to take dairy farming business to a new level. There are two main aspects of dairy supply chain that this system is trying to tackle with:

- To make the quality control and logistics chain process transparent and accountable; and
- Design an incentive-based app for mass market adoption of their products.

Every other day, one of more developments are happening on Blockchain concepts but none of them has tried to eliminate the combined efforts required to make agriculture sector competitive to other industries.

To overcome these limitations, we need a crypto-currency protocol based on blockchain technology which will address the issues of food traceability, farming loans, crop insurance, agriculture articles’ sales and logistics, and transactions related to land keeping and sales record.

The implementation of Blockchain technology for agricultural businesses could encourage the followings:

### A. Food Traceability

With a huge global setup of supply chains, food safety is a global concern for both the consumers and regulators. Blockchain food traceability is a more transparent system for supply chain management. It facilitates the ability to trace the entire lifecycle of any food products from its origin till the consumption instantly. Every product details is coded and available on the Blockchain network which can be verified by its QR code. Example, contaminated food products can be detected on the shelves and quickly removed.

### B. Reduced Transactions and Fair Pricing

The Blockchain has the potential to reduce the operational complexity of food network and hence can save the industry billions of rupees. It is capable to speed up administrative processes and to take costs out of the system while guaranteeing the security of transactions. The third parties’ interventions are nil in the case of these Blockchain

transactions and remains encrypted at the same time. The suppliers can directly make the payment to their buyers. It is a digital ledger that nobody can change but anybody in a system can update. When they do, it is time-stamped and everybody in the system gets the update.

Smart contracts radically reduce transaction costs. Auto enforceable code – whether on the protocol level or on the application level – standardizes transaction rules, thus reducing the transaction costs of: reaching an agreement, formalization, and enforcement.

*C. Reduces human error*

The Blockchain is functional on Distributed Ledger Technology (DLT). It is a system where some or all of the parties deposit assets into the smart contract and the assets automatically get redistributed among those parties according to a formula based on certain data. Parties involved in the smart contract transactions agree to pay each other and entire transactions history remain available on the network. So when it comes to the users, the inalterable nature of Blockchain serves as a protection mechanism against manipulative attempts and avoids possible human errors.

*D. Used in Crop Insurance*

In India, farmers always lacked an affordable and reliable insurance product, and they are not very well aware about how insurance could help them survive and when it will pay out. They have been facing unpredictable weather conditions for their crops and agro products. For low-income farmers, a loss of crop is delicate and difficult time. When these farmers need help in those difficult times, they end up fighting with the officials for their reimbursement whose profits are often dependent on avoiding these payouts. By introducing blockchain technology, these claim processes can be automated for insurance products. This technology has the possibility to stretch up to a limit where the farmer would not submit a claim and the insurer would not need to send a claim agent to verify the claim details on-field.

**II. WORKING**

Through KisanCoin, the beneficiaries of agriculture sector can do the trading of goods and services anywhere in the world more easily and securely. KisanCoin will allow the transfer of digital currency securely through a network of peer-to-peer system whose base will be Blockchain. The KisanCoin will facilitate a network which can be used by the beneficiaries of farming sector to conduct transactions anonymously and with a more secure protocol. The KisanCoin prototype will propose a secure network to curb the issue of fraud transactions and trace the fraud efficiently with a series of already verified transactions. This prototype will help a blockchain expert to create a unique trading platform which will provide the facility of a wallet and a payment gateway system specifically dedicated to the agriculture industry.

The KisanCoin platform can be integrated with top performing agriculture product websites who operate under ethical and legal standards and offer content without mistreating any of their users or merchants. All merchants of the KisanCoin platform have to register and identify

themselves which will ensure the overall security of this platform.

The KisanCoin platform will be a payment system which will facilitate the transfer of KisanCoin between farmers and businesses. What makes this platform unique is its ability to offer the exchange of digital currency and will be built on the blockchain technology, ensuring security and anonymity of the beneficiaries.

The core of this system will be to act as a substitute to traditional online payment methods such as PayPal. The KisanCoin platform will be able to replace traditional banking systems for businesses related to the agriculture industry

The payment instrument of KisanCoin will be KisanCoin token, which can be purchased during its token sale and later on through an exchange. The payment system will be electronic based and the delivery channel will be the KisanCoin wallet.

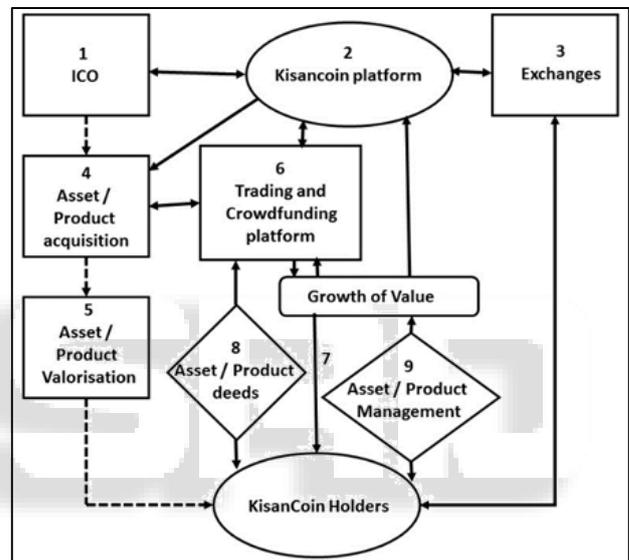


Fig. 1: Flowchart of KisanCoin ICO

**III. ADVANTAGES AND DISADVANTAGES**

*A. Benefits for Middle-Class Farmers:*

Small and medium-sized farmers of emerging economy are sensitive about their financial literacy and gaining access to financial resources. Through KisanCoin, a blockchain based wallet system; underbanked populations will have the opportunity to receive payments and micro-financing. All of these transactions will remain transparent and tamper-free. This chapter will explore the in-line opportunity which will enable the financing institutions of India to adopt the KisanCoin platform and make this sector more transparent and secure. The KisanCoin platform will keep proof of origin for the money and all transactions, ensuring users know exactly where their money is and the latest transactions on their account.

*B. Conflict Resolution will be easy for Farmers and Insurance Agencies*

Since the advent of agriculture, farmers and insurance provider agencies has been facing a situation of limbo. Farmers have confronted unpredictable weather conditions, commodities risk and slow claims process; while on the other

side the insurance agencies have challenges of processing large number of claims, lack of workforce and fraud by the insured at mass level. However, the introduction of Blockchain technologies has shown some hopes for them. KisanCoin will help in mitigation of these claims processing system. Its system will keep track of natural disaster, weather data and operational volatility of agriculture business. This chapter will do the situational analysis of the current agricultural crop scenarios and propose a feasible solution to tackle these issues using KisanCoin.

#### C. Tracking Product Lifecycle will be Easy

The proposed system will enable easy and secure trade of farm products anywhere in the world. Online purchase and sales of goods has been witnessed as highly risky trading because of the lack of transparency. KisanCoin will be an encrypted, decentralized, peer-to-peer based digital transaction system which will connect the beneficiaries directly. Participants on this platform can earn the benefits of KisanCoin can earn the benefits for their own sake.

#### D. Easy of Land Ownership Traceability

Today, it is already possible to apply the blockchain technology in various aspects of agriculture sector. Applying the same technology in the public registry of the land in many countries where the land registrations, land ownership transfer details does not exist online will become easy with this system. This will ease the process of land property exchanges, costs and uses of lands will become much faster.

### IV. CONCLUSION

Blockchain has great potentials. However, it is not a solutions for every real-life problems. The right ecosystem and governing bodies are needed to sustain any kinds of solutions and same goes for blockchain. Blockchain solution development for any real-life challenges needs a careful situational analysis of the existing state of the problem, including infrastructure, users' adaptability, digital literacy, and other available parameters involved. Denying the importance of any of these components would result in unnecessarily increasing the overheads of the beneficiaries and could result in the initiative falling miserably.

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