

Review Article

**A STUDY ON FIN- TECH IN INDIAN AGRICULTURAL SECTOR**

**P. Madhu Kumar Reddy\*, Dr. A. Rama Kumar\*\***

**\*Research scholar, \*\* Pro-Vice Chancellor, K.L.U. Business School, K L E F (Deemed to be University), Greenfields, Vaddeswaram, Guntur, Andhra Pradesh, India.**

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**Abstract**

**Agriculture** is the primary occupation and the backbone of the Indian economy as per the report of FICCI, over 70 percent of the population in India depends on agriculture. Indian Government has been trying hard to provide financial services to the people who don't have access to these services through 'Digital Drive', which was partially successful. But still large number of rural people especially farmers depends on traditional credit system. Presently to support farmer technologically Agri- tech is providing services. Fin-tech provides financial service to all the sectors, but there is no impact on farming sector for providing credit facilities. So the farmers are more dependent on the private lenders for loans with high interest rates for their farming needs. But due to this repayment of loan with high interest has become huge burden and is leading to suicides and deaths. The aim of the paper is to analyze the fin- tech in Agri sector and its impact in helping the farmers to fulfill their needs to lesser their burdens. This helps farmers to overcome the situations and sustain to the changes in the market

**Key Words:** Fin- tech, Agri-Tech, Agriculture sector, financial services, technological challenges

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**INTRODUCTION**

Agriculture is undergoing a huge transformation. Today, India ranks 2<sup>nd</sup> worldwide in farming outputs. In the past, agriculture was seen as a subsistence activity of farmers involving crop and livestock production. In the coming years agriculture will pave a way to fulfill the food requirement of all as by 2050 world's population will reach to around 9 billion. Food may not be sufficient for the increased population need to have more farming productions which may require benefits like Machinery, Technological support, easy Financial Credit, convenient distribution channels and various Govt. schemes and subsidiaries.

Most of the analysis and researchers had examined the reasons behind the farmers suicides are climate conditions, loan burdens, genetically modified crops, psychological factors, family issues and political factors.

Fin- tech and Agri- tech have been rated as one of the important sectors to bet on by investors, but when comes to reality that no large scale has been show impact on the farming in case of credit facilities. A lot of top most companies emerged assuring small and medium term loans for those of not enrolled in banks yet, but agricultural community has been left. Strategies and interventions that have been implemented seem to have favored the 'already included', with little benefits for the 'unreached'. With the increase in technological changes, collaboration between Fin- tech and traditional formal sectors will define the future of financial growth in India. Fin- tech startup provides an opportunity in framing personal loan products for farmers like loans, education, debt trap etc., Agri- tech startups in few years have focused to get down the cost of operations for farmers in future, but not on providing financial inclusion to the community. Due to this many of the farmers are still depended on micro finance, cooperative banks, and money lenders for their financial needs.

**MOTIVATION OF THE STUDY**

Many studies discussed different aspects on agriculture aspects especially on of Financial, Technological, Machinery, on time credit, vibrant supply chain, Schemes as per the changing trend of market etc with respect to Indian scenario. Due to increase in utilization of ICT in developing countries creates an opportunity to access these in agriculture for

sustainability. In spite of that it has evoked various questions there by considering it necessary that a study to be undertaken to investigate that these new technological changes has provide any impact on improving the productivity in agriculture sector and suggest the way how they can be regained or rather improved.

**REVIEW OF LITRATURE:**

Ankit Gupta (July 2018) "Enabling Business of Agriculture via New Financing Technologies". The author analyzed the impact that the e- NAM and Kisan call center are having on daily lives of a farmer all over India. Author compared the minimum and maximum price and model prices of e- NAM and Sonepat mandi. Author analyzed how medium farmers are getting huge money by covering paddy and lady finger crops. The result showed that the farmers are able to earn more on ladyfinger than paddy. Author suggested the farmers to grow lady fingers and by the government intervention to formulate proper regulation. This helps farmers to grow more of lady finger crop and grow paddy in normal quantity by using rotation process. With the comparison of prices the author analyzed that the farmers who are selling through e- NAM were earning more amount rather than physical selling. Author concluded the study by saying that both e-NAM and Kisan Call Center (KCC) when implemented effectively at a larger scale all over India, helped farmers in their agriculture management practices. Author suggested farmers to take help of E-NAM which is arranging time to time awareness campaigns at block level in every village where e-NAM mandi is available. They should provide farmers with digital literacy short courses which makes them aware about how to use digital banking services Vasant P. Gandhi (2014) "Growth and Transformation of the Agribusiness Sector: Drivers, Models and Challenges". Author explained that many people who work in agriculture in fact do not work on farms but are occupied in businesses of seed, fertilizer, agro-chemical, farm machinery, food-processing, marketing and trade, they even engaged in finance, research, distribution, and marketing activities which provide services to the production agriculturalists. Agribusiness provides inputs to the farmers, and helps in producing food, fiber and byproducts. Author listed out the types and activities in agribusiness. He explained the kinds of agribusinesses with examples. The key drivers of agribusiness have been analyzed in the study. The study resulted in an intense focus on science

and technology for increasing crop yields which has led to the need for numerous modern inputs for increasing production. Commercialization has also led to diversification in the production, as farmers react to market signals, needs and prices, and seek profits. There was a change in gross value consumption by growing high value agriculture. The framework was framed and analyzed for the Process of Growth of Input Agribusiness and Markets.

Dr. Dushyant Kumar (September 2014) "Agriculture Credit Reform And Financial Inclusion In India". Indian Govt. has taken a major step to strengthen the agriculture sector that the Waiver of Debt in agriculture and doubling of Agriculture credit. Author felt that Agriculture GDP Rate is decreased even the agricultural credit is good in past years. Small and marginal group farmers are facing difficulties to get credit even the credit data flow is good. He gathered data from R.B.I, NABARD, Commercial Bank, Cooperative Banks for this descriptive research. There is no uniform credit policy across the country. He concluded his research that the credit policy should be flexible according to the local socio-economic conditions. There should be a more innovative models required for financial inclusion in rural area to reach small and marginal farmers.

Rajiben Solanki (2016) A STUDY OF AGRICULTURAL FINANCE BY COMMERCIAL BANKS IN INDIA: A CASE STUDY OF CENTRAL BANK OF INDIA. Solanki attempted to study the agriculture advances by commercial banks. In his study he considered secondary data that consists of annual report of the concerned bank and various other sources data also used from RBI reports, Economic Journals, NABARD reports etc. The analysis was made by the application of development analysis; calculate ratios and chi-square test with time series analysis. During the study period the sample bank has failed in agriculture lending to reach the target given by RBI. The study concluded that the credits given to Indian agriculture sector has been increased. The credit provided by the bank has greater than before its advances. But an attempt has to be taken by bank to decrease its outstanding, so that the recovered credit can be used in to agriculture sector for future growth.

**OBJECTIVES OF THE STUDY:**

1. To study about the importance of fin- tech in agriculture.
2. To study about the role played by fin- tech and agri- tech in Indian agricultural sector
3. To study about the financial services provided to farmers for agriculture.
4. To analyze the problems faced by agricultural sector due to fin- tech.
5. To suggest suitable measures through technology.

**RESEARCH METHODOLOGY**

The study based on new trend and patterns occurred in agriculture sector. The study is based on exploratory research; therefore data have been collected through secondary sources mainly from ENAM website.

**IMPORTANCE OF THE STUDY**

This study will help us in understanding what more is required from government and financial institutions to help the farmers in reducing their financial burden. Various online trading platforms like e-NAM and KCC is helping farmers for better price and advice about their crops, government schemes, fertilizers, bio-pesticides etc.

**IMPORTANCE OF FINTEC IN AGRICULTURE:**

Now a day's technology in Agriculture has a wide scope. But still, it is not on par level because of lack of awareness among the farmers. As a result a study has brought to learn the latest Modern Technology in Agriculture.

- Increase of a vast demand in agriculture in future
- To maximize the varieties of hybrid seeds with a single seed.
- Promotion of a new products

- Rise in awareness of IIT in Agro based industry
- High genetic modified production
- A boom in irrigation plants
- Advanced technology ally human power in farming activities

**ROLE OF FINTECH AND AGRITECH IN INDIAN AGRICULTURAL SECTOR**

Most of the Indian population is depend on agriculture for standard of living and economic growth. In 2017-2018, a survey observed that there is an ally in agriculture workforce from 58.2% to 25.7% by 2050. Therefore the level of farm mechanism must increase in the country. With this highlights some startups are enhancing creative paths to empower the farming community. Some of the startups as follow:



Source: FAO-ITU E-agriculture Strategy Guide

- **NaPanta**: With this farmers can rent agri-equipments, sell their crops without intermediaries of their choice price and without browsing facilities too.
- **Mandi Trades**: Assist them to ally wastage and transpiration cost and to give information about crops through mobiles.
- **AgriApp**: It provides a single-click agri-app, which assist in crop management decision and a path for organic food nation.
- **Rainbow Agri Market**: It connects a suitable buyer for his crops in 2 minutes.
- **Kisan Suvidha**: It provides current and estimates the next 5 days commodity price, fertilizers details and crops in the nearer market.
- **Pusa Krish**: Provides recent information in ICT by IARI (Indian Agriculture Research Institute).
- **Crop Insurance**: Assist farmers to analysis insurance premium of farm, cut-off dates and company contacts for their crop and location. It can also be used to get details of normal sum insured, extended sum insured, premium details companies, and banks.
- **Agri Market**: Its objective is to provide crop prices within 50km nearer to their device location.
- **Uzhavan' (meaning - farmer)' App** - It assist them to operate 9 types of services, including details about their crop insurance, information on farm subsidies, book farm equipment and related infrastructure and receiving weather forecast for the next four days.
- **E NAM**: This is a completely Indian Govt. E-commerce website to assist farmers from rural areas. It provides a homogenous national online market for farming crops and commodities.
- **KCC**: This is a major step taken by Indian govt. for giving credit facility to the farmer. It provides financial assist in agriculture requirements.

### FINANCIAL SERVICES IN AGRICULTURE SECTOR

One can avail a loan for the following activities related to agriculture:

- Running day to day operations
- Buying farm machinery such as tractors, harvesters, etc
- Purchasing land
- Storage purposes
- Product marketing loans
- Expansion

### PROBLEMS IN AGRICULTURE SECTOR

- Fragmented land
- Looting Middle men
- Gamble of Monsoon.
- Victim of its past
- Ignoring Women farmers
- Cycle of Indebtedness
- New threats of Global warming.
- Government policies

### MEASURES THROUGH TECHNOLOGY

- Smart machineries
- E- NAM virtual market
- Smart sensors
- Hyper spectral imaging
- Digitization of land records.
- Jan Dhan Account – Aadhaar – Mobile Trinity. Once they.
- Climate Resilience farming (CRF)
- Drones and smart phones

With the above data it is noted that most of the farmers are facing financial problems in agricultural sector. With the help of the following ways one can reduce the financial problem by providing credit facilities to the farmers through Fin- tech.



## Banking, Trading, Insurance

Source: FAO-ITU E-agriculture Strategy Guide

- 1) Easy availability of credit:** Due to lack of knowledge about funds and market many of the farmers are forced to go through middlemen for credit facilities. Lending money for farming operations will happen in any nations like India. But Indian farmers in high numbers will go to middlemen in order to run their daily operations.
- 2) Smooth pathways:** Now farmers have better options for creating their own pathways without intermediaries, which forms a smooth functioning in farming activities.
- 3) E-payment:** Traditional mode of payment is no longer in these days with this technological world farmers are now making use of various ongoing payment methods which is as better than as before.
- 4) Assured Security for crops**  
With the advanced feature in KCC farmers are secured under the umbrella of insurance premium.

### CONCLUSION

Over 22 years, nearly 330000 farmers committed suicide in India which reflects of immensity of the agrarian crisis in India. The conditions of these multi decadal farmers' suicides are very pathetic. According to NITI, the average income growth of a farming family by 2016 was only 0.44% which is stagnant. Finance in agriculture plays an important role but always inadequate for farmers. Because of these inadequate resource and absence of on time credit or loan facilities at reasonable rates, many of the farmers not foregoing for improved seeds and not opting new technological changes.

**Ethical clearance:** The study is a part of regular thesis

**Source of funding:** The first author is enrolled in PhD programme at the K.L.U. Business School, K L E F (Deemed to be University)

**Conflict of interest:** Nil

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