

# e-Farmers Friendly App for Rural Development

Pushpa.B

Dept of Electronic and Communication Engineering, Channabasaveshwara Institute of Technology, Gubbi, Karnataka, India. pushpa.basavaraju97@gmail.com

Chandan.N

Dept of Electronic and Communication Engineering, Channabasaveshwara Institute of Technology, Gubbi, Karnataka, India. Chanduchandan624@gmail.com

**Abstract**—Agriculture is believed to be the backbone of Indian economy. A backbone that has been bent since a long time as farmers are suffering huge economic losses. But the advent of Information and Communication Technology (ICT) to develop agriculture in India shows us promising ways to solve this problem. People around the Globe from few years to now carrying a handheld computer connected to the Web to get the information about the World at their fingertips. e-Agriculture is an emerging field focused on the enhancement of agricultural and rural development through improved information and communication processes. We have 29 States, 7 Union Territories, 640 District, 6, 49,481 villages and 70% of the Indian population lives in rural areas as per the Census of India 2011. Around 68% of Indian population is dependent on Agriculture for their livelihood. But the farmers are suffered from losses due to the impact of mediator in between the farmers and customers. By using e-commerce like e-agriculture introduces these application which connects farmers and customers directly with several advantages without losses. The buyer can purchase the products from near by villages.

**Keywords**— e-Agriculture, ICT, Android ,app

## I. INTRODUCTION

Indian population relies on agriculture as its primary source of livelihood. Agriculture sector in India is facing lots of Challenges. 50% of the population engaged in agriculture are still illiterate and just 5% have completed Higher Secondary education. The Education & Incomes of agricultural labourers were very low. During 182 families operating farms below 1 hectare was 56% which has become 70-75% now. Information and Communication Technologies (ICT) plays a vital role in Development & Economic growth of the Developing countries of the World. ICT also has an impact on a country's development and growth. Recent World Bank study shows that a 10% increase in mobile phone subscribers is associated with a 0.8% increase in economic growth while 10% increase in high speed internet connections is related with a 1.3% increase in economic growth. By applying this online marketing to agriculture and agricultural products the economic growth will grow tremendously in our country other than marketing with other countries .Let us buy and sell the products with in our country to increase the economic growth of our country [2]. By integrating technology into development , more effective and speedy solution can be found for sustainable human development and economic growth. e-agriculture involves application of

information and communication technologies (ICTS) in an innovative ways to use agriculture in rural development.

This Technological Application can be used by the illiterate people and provide the different opportunities for selling and buying the products for farmers and costumers directly. This application will also provide the authorized by different languages. Other than products people can buy or sell the yield before plugging. This provides the selling and Purchasing the seeds, crops, nursery plants, fertilizers by this application. The organization of the paper is given below : Section I consist of introduction , Section II contains the methodology, Section III consists of the Implementation, Section IV consist of challenges, Section V describes the conclusion and future scope.

## II. METHODOLOGY

By developing this technology connects the farmers and the customers . It is very interactive and easy for any novice user to understand. This application provide the language translator such that farmers or customers can access the application by their known language. Application provides an interactive user friendly manual designed to reduce effort of the user. Application consist of novice user videos which guides the new user . In this application the farmer are

register by their details and crop details such as quality and quantity of the products, price and quality certificates.

By this innovative idea of marketing in online gives the promising way of solving problem. This application contains three stages farmer, app, customers.

In this application the farmers as well as the buyers are register with their address and bank accounts the buyers are directly connected to the farmers. The amount transferred by the buyers account to the huge implementation required lots of workers. The farmer are registered with their products buyers booked their products such products are tested and certified by the app developers the products are collected and reached to the customers with sum charges without introducing the products to the market .This transaction and communication can be done by the farmer to farmer for buying and selling of products such as crops, breeds for rearing, fertilizers, second handle machines and so on.

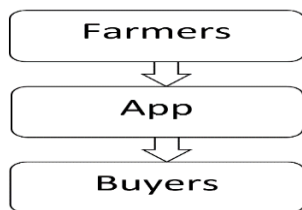


Fig 1: Three stages of this Technology

A proper plan is always so much helpful to solve any problem . We have tried to bring all of the integration of solution that is helpful to solve the entire problem that may happen to farmer. The portal will help the farmers to overcome the facing problems by using the application of e-agriculture .

The main contribution of this paper as follows:

- There are three stages of this technology farmer ,app and the customer
- Firstly our system provides marketing and monitoring system is run by the producers (farmers) own to local or remote buyers through advertising there Products with the Fair price
- Here a marketing system is possible without the third party which will create an easier path of better benefit and farmers will earn more.
- The buyers are also have an advantage of buying the products with less price, fresh and healthy products with out any preservatives added and home to home delivery of agricultural products .
- There will be job opportunities to the people for literates as well as the illiterates with benefits.
- The buyers have an advantage of buying the products with perfect quality checking of every products before reaching the customer.
- The farmer can sell their products by betting their crops and yields for the fair buyers .
- This is the easiest way of selling the products for the farmers and buying the products for the customers.

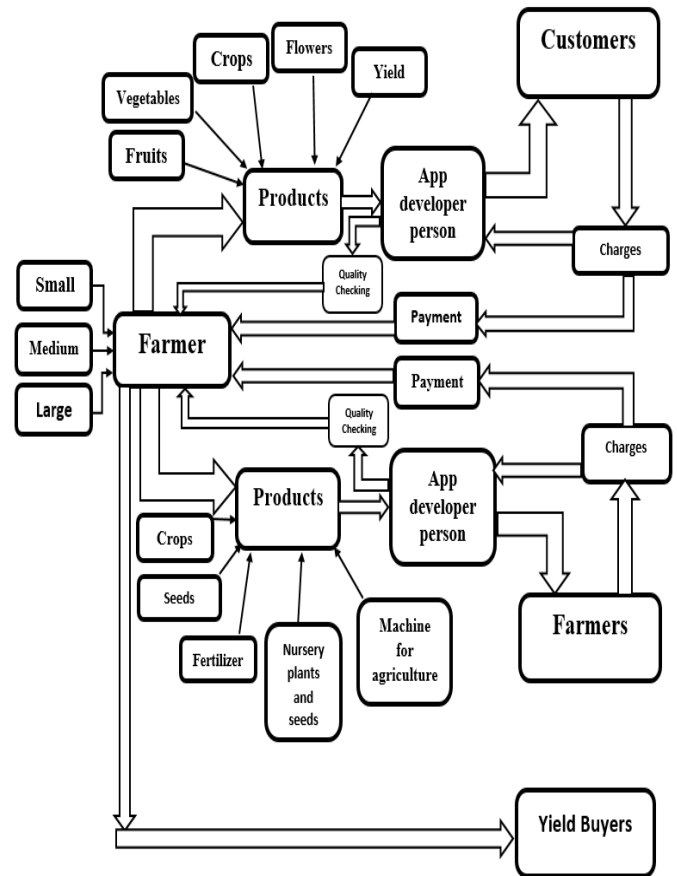


Fig 2: Block diagram of this technology

This technology have one producer as farmer and three ways of buyers .first way is from farmers to customers ,second way is from farmers to farmers and third way is from farmers to yield buyers block diagram is as show in above fig 2.

A. *Farmers to costumers*

This communication and transaction between the farmers and the customers as follows :

- The farmers selling their products after their cultivation with low price, so to avoid this problem the online marketing is introduced to provide the fair price to farmers.
- The customers are suffering from the malnutrition in their food so to avoid this problem of the buyers we are introducing the online marketing by home to home delivery .
- Farmers are uploading there crop and species and quality details, quantity that they grown, picture of the crops and crop details.
- The customers are search there products for their requirements like quality and quantity details.
- The system provides search result by displaying nearby products uploaded by farmers as short distance as possible by the use of location.
- The buyers are booking there products with the contact details and address and quantity details that are required.

- The farmers booked products are locked and received as soon as possible by the developer person with quality checking officers .
- The collected products are reached to the customers as soon as possible by developer person.
- After reaching the customers payment are done by all the way as cash on delivery , credit or debit directly to the farmers account with charges to the developer person for transportation.

### B. Farmers to Farmers

The Farmers can sell their products to another farmer with the fair price and also their requirement.

They can sell the products such as seeds, nursery plants, nursery seeds, crops, cereals, fertilizers, and second hand machineries, machines for their cultivations and so on.

They can Upload their crop photos with details in the web application . The Buyer are booking the Products for their requirement and the process are carried out as above in farmers to customers section.

### C. Farmers to Yeild buyers

The farmer who are having tree garden such as areca trees, coconut trees, mango trees and so on. Small plants garden such as flower plants, coffee plantation, tea plantations and so on.

The farmers who are unable or not taking risk in cultivating these crops and not able to performing the procedure from plugging to marketing. They can give their growing crops as rent to another farmer or buyers with the registration for some time period .

So the farmers can upload their garden photo before plugging. So that buyers can book the upcoming crops for rent in the application.

Further process are done as done in farmers to customers section.

## III. IMPLEMENTATION

In our implemented process, we have used web base technology which is easy to use to the farmers and mainly the rural farmers who will be benefited. As well as the buyers also benefited with the satisfied price, healthy and fresh products by this technology.

Farmers and the buyer information is stored in the data base officially. Because of a web application, we can maintain a large database in this project. This application can be access by different languages. If the farmer needs the help of video tutorials that will be available for the farmers well as the buyers. Navigation and mapping facilities are available. User manual with steps and procedure are made available. Above Fig3 flow chart is as follows:

- The application contains two wings that is farmer and the costumer.

- On one wing farmers register with all the details such as name, photo, address, email, phone number and get login into the application with password.
- After login the farmers account as been created. In that account they can upload pictures of the products with all details such as species, quality, quantity details .
- On another wing buyers are register with their details such as name, photo, address, email, phone number and get login into the application with password.
- After login the buyers are searching the required products the application shows nearby farmers uploaded products and booking can be done for required quantity.
- After the booking process get completed the developer person with checking officer details and time is send to the farmers. As soon as possible the products received from farmers with quality checking by officer or experts.
- The received products are reached to the buyers as soon as possible with in the time.

After reaching the buyers the payment process are done that can be done any ways such as cash on delivery, debit card, credit card or buy EMI for large amount of products with charges for transportation.

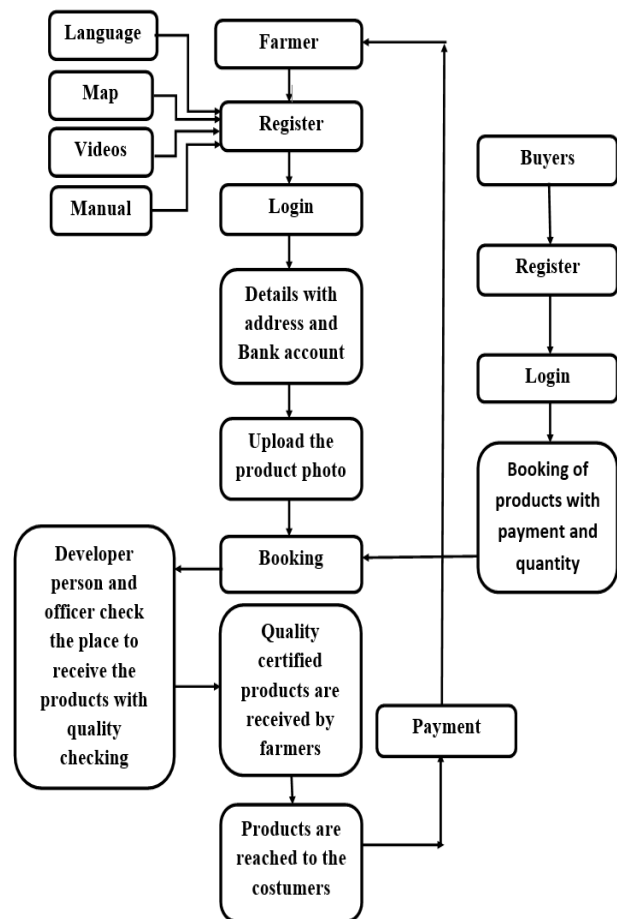


Fig 3: Flow chart of this technology

#### IV. CHALLENGES

The following are the some of the challenges of the Indian agriculture.

Agriculture sector in India is facing lots of Challenges. 50% of the population engaged in agriculture are still illiterate and just 5 % have completed Higher Secondary education. The Education & Incomes of agricultural labourers very low.

Lack of proper planning for utilization of funds available under the foreign aid is also a major issue. As per the CAG report. The total amount of unutilized fund was Rs.9,557Crore for “Agriculture & Rural Development”[2].

The real challenge for the India Agriculture is the information asymmetry between farmer and farmer, village and village, region and region and the country as a whole versus other countries in which e-Agriculture is the feasible solution. Information and Communication Technologies (ICTs) play a key role in development and economic growth of the Nation.

Connectivity especially high speed Internet connectivity in rural areas is also another big challenge for e-Agriculture. Although the government is providing the first level instant solution for Agriculture related issues but it not sufficient for the growing demand of e-Agriculture .ICT is already on roll in e-commerce, but e-Agriculture is yet to find its feet.

e-Agriculture is an emerging field in the intersection of agricultural informatics, Agricultural development and entrepreneurship, referring to agricultural services, technology dissemination, and information delivered or enhanced through the Internet and related technologies. There are lots of scopes for Study, Research & Development in e-Agriculture[3].

#### V. CONCLUSIONS AND FUTURE WORK

- As an agricultural country, we need a strong technology and information base system to keep pace with modern agriculture of the world which will make our country a truly developed one [3].
- This web portal will help a lot to make our country a proper developed one removing poverty and creating the sources of self-employment for the large number population of our country with the help of modern science and technology.
- The e-payment system of the system is not strong to do all types e-money transaction. In future we want to establish a strong e-payment system[3].
- Proper marketing system, farmer empowerment, self-employment, total storage and collection of products, job sources in a word a modern agricultural system with a modern technology will be possible from the web portal project to make our country the richest, the happiest and the most developed one in the world.

- Using Technology to Make Farming Easier and Better: Simplified E-Farming Support farmers to earn more and buyer to get healthy and nutritious food for less price and home to home delivery.
- There is a job opportunities for large number of people. This make people to migrate from city to village is the biggest advantage for the country.

#### REFERENCES

- [1] Role e-Agriculture in Rural Development in Indian Context by Deka Ganesh Chandra and Dutta Borah Malaya in 2011 International Conference on Emerging Trends in Networks and Computer Communications .
- [2] e-krishakMitra by Sowmyaa Guptaa and Gaurav Trivedi in 2016 International conference on accessibility to digital world.
- [3] Smart e-agriculture monitoring system: Case study of Bangladesh Juthi Kundu , Supriya Debi , Saleh Ahmed and Sajal Halder in 2017 4th International Conference on Advances in Electrical Engineering (ICAEE)
- [4] Using technology to make farming easier and better: Simplified E-Farming Support (SEFS) by Saurabh Dwivedi , Vishesh Parshav , Nishkarsh Sharma , Pratik Kumar , Shubham Chhabra , R H Goudar in2013 International Conference on Human Computer Interactions (ICHCI)
- [5] Design and development of e-farm with S.C.H.E.M.E. by Samruddhi Khandare, Sushopti Gawade, Varsha Turkar in 2017 International Conference on Recent Innovations in Signal processing and Embedded Systems (RISE)
- [6] Building semantics of E-agriculture in India: Semantics in e-agriculture by Sasmita Pani ; Jibitesh Mishra in 2015 International Conference on Man and Machine Interfacing (MAMI)
- [7] <https://www.enam.gov.in> application released by Narendra modi