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# Smart Agricultural System

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**Abstract:** India is an agricultural country. Farmers are the life blood of nation. The agriculture sector in India is expected to generate better momentum in the next few years due to increased investments in agricultural infrastructure such as irrigation facilities, warehousing and cold storage. Factors such as reduced transaction costs and time, improved port gate management and better fiscal incentives would contribute to the sector's growth. Furthermore, the growing use of genetically modified crops will likely improve the yield for Indian farmers. But the current condition of Farmer is very pathetic. The Farmers should be introduced to the smart farming techniques because upon their well-being depends the welfare of the nation. The project supports various objectives such as Market Information, New Techniques regarding better farming, Governments Schemes, Resource Information, Latest Videos, Support Scientific Research, Loan Information. We have taken our initiative to provide betterment in this field with recent technology .It will help farmers to know agro information for leading to achieve success.

**Keywords:** E-agriculture, Knowledge management, Environmental Resource Information

## I. INTRODUCTION

Agriculture plays a vital role in India's economy. Around 58 percent of the rural area depend on agriculture as their principal means of livelihood. Agriculture, along with fisheries and forestry, is one of the largest contributors to the Gross Domestic Product . The agro industry in India is divided into several sub segments such as canned, dairy, processed, frozen food to fisheries, meat, poultry, and food grains. Sustainable agriculture, in terms of food security, rural employment, and environmentally sustainable technologies such as soil conservation, sustainable natural resource management and biodiversity protection, are essential for holistic rural development. Due to digitization in today's world many farmers are using smart phones. Our project develop such application which will help farmers for gaining updated information's in real-time. It is the requirement of today's farmers to get various information regarding agriculture like research, loan, market information, government schemes etc. which is available in distributed fashion in the form of application, website(s) and book(s) etc. This project gives all above information centrally in the form of app as well as website. The main objective of this project is to provide real-time Market Information, Information regarding New Techniques used for better farming, Time to time updating of various Schemes approved by Government and NGOs Environmental Resource Information for planning of farming. To promote farmers for using websites as well as mobile app for latest updates by providing awareness sessions and training. This project provides the information on agriculture produces; machineries, research etc. Detailed information on the government policies, schemes, agriculture loans, market prices, animal husbandry, fisheries, horticulture, loans & credit, sericulture etc. is also available.

## II. SYSTEM ARCHITECTURE

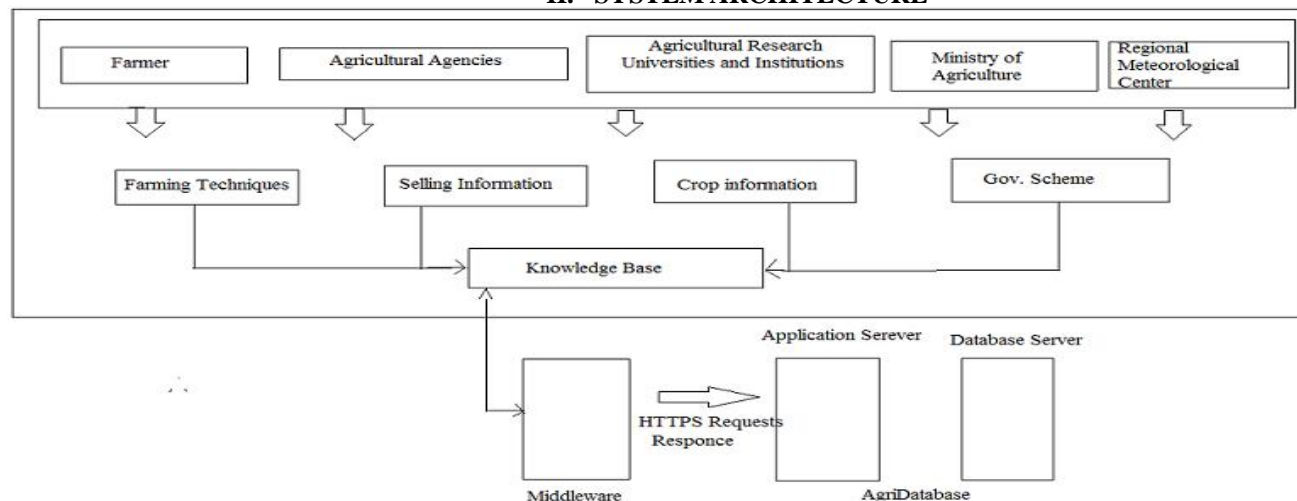


Fig: System architecture - smart agricultural system

### III. LITERATURE REVIEW

#### A. *Research on the architecture and strategies of Yunnan rural human resources. [1]*

Published year :2017

Author :Jing Tian and Yunli Xie,China.

Description :They just research on Yunnan area.Yunnan is located in china and it holds the second big share of the entire poor group of china and is an agricultural province with largely rural population.they just analyzed the E-education in rural areas of Yunnan,by providing smart environment,smart teaching,smart education for farmers.

#### B. *An architectural framework for E-agricultueal system. [2]*

Published year : 2016

Author : Mohanraj I, J.Naren

Description : The framework is well illustrated presented for agriculture to boost farmers productivity based on premise that informed farmers are productive and that ready market assist to minimize wastage. also display the market availability overall cost estimation.

#### C. *The research of IOT of agriculture based on 3 layer architecture. [3]*

Published year : 2016

Author :Fu Bing,Jingzhou Hubei,China

Description : The small scale of farmland experiment is carried out to help farmers enjoy benefits of monitoring the plant production process,early warning of main diseases pests,and rapid diagnosis.

#### D. *SENTINEL-2 FOR agriculture. [4]*

Published year : 2015

Author : Bontemps S,Arias M,Cara C,Rabaute T,Valero G,Italy.

Description : In this paper only market transparency and food production information is observed gloabally by checking for each product 5 algorithm tested over 12 sites.for increasing agriculture in national,regional and global scale in accurate forecast,transparent and relevant.

#### E. *A scrum based system for E-agriculture system. [5]*

Published year : 2014

Author : Muniba Khudadad,Yasir Motla,Sohail Asghar,Syeda Anwar,Zahid

Iqbal,Pakistan.

Description : In the software industry,agile methods are in practice at a very large scale bcz of its ability of accommodating the change ,quick results and high level of customers satisfaction.scrum is an agile methodology hence srum is used for the development of agriculture system.it suggest a framework which will support the development of agriculture system.

#### F. *Context aware education for agriculture. [6]*

Published year : 2009

Author :Richard Beckwith and Sharon Greenfeld

Description : This research looked at how teachers use an agricultural context(i.e., School gardens) to teach and how farmers learn within the context of a farm.

### IV. MATHEMATICAL MODEL

Mathematical modeling is used for measurement of how the system is implemented mathematically. It provides flexible i.e. mathematical thinking and use of concepts of set theory.

Formal set of notation description, informal English description (Set of all inputs) gives:

#### A. *System Description*

1) *Input:* Farmer, Agricultural Objectives Information.

2) *Output:* Farmer can get maximum information from respective domain.

3) *Functions* :providing all the features like market Information, Loan Information etc. in collective fashion.

$$S=(I,O,F)$$

Where,

$$I=\{I1,I2,I3,\dots In\}$$

$$O=\{O1,O2,O3,\dots On\}$$

$$F=\{F1,F2,F3,\dots Fn\}$$

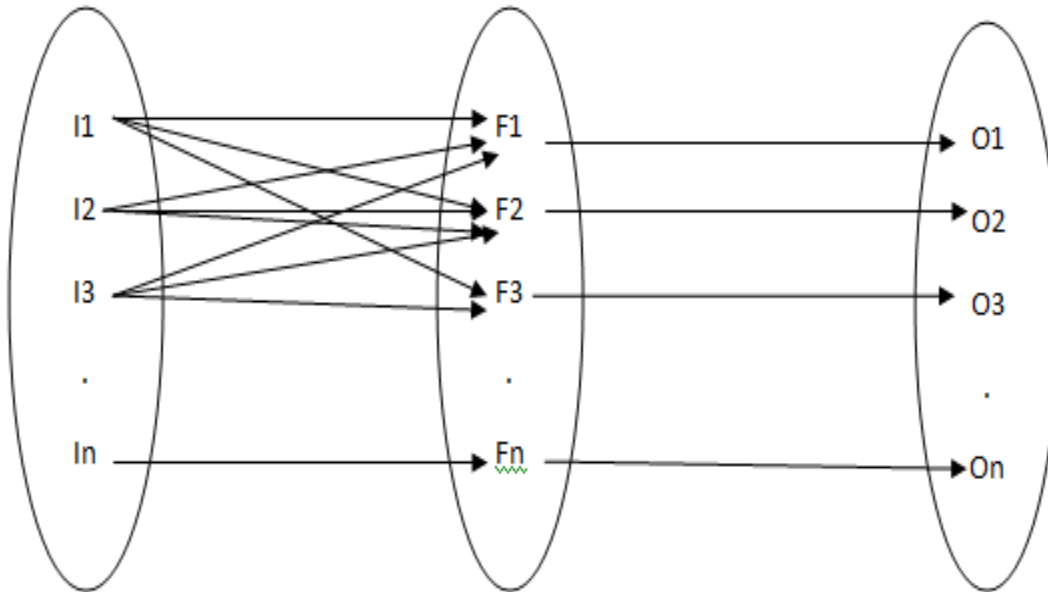


Fig.1 Mathematical Model

### V. FUTURE WORK

Farmers are the direct user of agricultural information resources, only by improve the farmers' information quality ,can we make the most effective use of agricultural information resources. Some farmers in India are poor educated and information awareness, so besides strengthen rural information infrastructure construction, we should improve the information literacy of farmers through advocacy, training courses, farmer schools and other measures ,making sure that agricultural information resources in the rural production play an important role.

### VI. CONCLUSION

The proposed system will provide a good economical health to farmers by utilizing full potential of farmer.The farmer will be introduced with new farming techniques,market trends,loan information by just using their smartphone.

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