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A Vegetable Price Rise Control System

Girish N. Parwathmath[1],Dr. S. A. Angadi[2]

[1]*Student Department of Studies in Computer Science & Engineering, VTU Belagavi, India 590018*
[2]*Head of Department of Computer Science & Engineering, VTU Belagavi, India 590018*

Abstract - *The vegetable price tumbling is a very serious problem and has remained unsolved over years. The problem comes with the farmers, he does not have any system or platform to check the trend of any particular vegetable crop cultivation. He blindly cultivates by assuming things and also not bothering of profit, because of this the price of particular vegetable crop will touch bottom and other vegetable crops reaches very high price, which will directly affect the farmer, the consumers and indirectly the countries growth. The proposed methodology can be used to counter the above problem to some perspective. The effective information is very necessary to the farmers to take the decision at the right time thus the proposed methodology provides the information to the farmers not only about the trend of cultivation in distant places but also provides the suggestion about the vegetable crops to be grown.*

Key Words: **Agriculture related information, Smart farming, Decision based on trend of cultivation, Pests information, Smart cultivation decision**

1. INTRODUCTION

The tumbling of vegetable prices is very serious concern for the farmers, consumers and also to the government. We experience prices of vegetable sometimes very high and sometimes it's very low. The high price directly affects the consumer and low price directly affects the farmer. If we look at the farmer's point of view the farmer faces huge loses, because his investment of time and effort is more with respect to the outcome of his crop.

The farmer uses old methodologies to cultivate the crop, his assumption of several factors to make his next decision on cultivating vegetable crop. He assumes factors like 1) last season the price was good so, this time also lets cultivate the same vegetable crop. 2) All are cultivating the X vegetable crop so, let's cultivate it. 3) My fields are empty so, let's do something randomly. These assumptions will give him very disappointing results. It is impractical to roam around all the villages, town's etc to check about the vegetable cultivated, so because of this reason he has only option of assuming or blindly predicting things.

This work shows how the problem of farmer can be solved, however it is not able to address all the crops. There should be a central system which keeps all the data of cultivated vegetables area wise and anyone can access the cultivation related data to decide on the vegetable cultivation. He can also view the distant places information on the vegetable, previous record and can predict the upcoming quantity of particular vegetable in the market. This system can be of web based or app based. With the proposed system the farmer and government are able to know the current status of any vegetable cultivation related information of any area (Taluk, District, and State). The government can use this data to predict the market and can also enforce the vegetable seeds manufacturing companies to limit the production in some perspective.

1.1 Brief Survey

The literature survey is conducted on the technologies or technologies based solution in the area of agriculture practices. The survey is conducted on several agriculture related papers. [1] Crop Recommendation System for Precision Agriculture, in this paper the authors highlighted the problems of farmers, like the farmer considers the crop cultivation without doing any soil analysis, which h directly affects the productivity of the crop. The paper describes the solution for the problem, by considering the soil characteristics or soil attributes like depth, texture, ph of soil, color, drainage, erosion, water holding capacity etc of a particular region. These attributes are analyzed with respect to the crop and suggests the crop for cultivation which has high yield. SMART FARMING POT [2] this paper tried to solve the problem of the crop yield by considering other many parameters like soil characteristics, fertilizer requirement, sowing method, water requirement for growing the particular crop. This work tried to balance the resources required to the particular crop. If the resources input exceed the pre-defined limit then the system issues an alert and gives suggestions what measures needs to take to improve the crop growth. The work is demonstrated using a sensor which senses the temperature, humidity, and environment. Farmer's Analytical Assistant [3] this paper discussed about the production of crop and the profits gain by using traditional methods by the farmers. This paper considers many attributes like rain fall, past market prices, area of land and soil characteristics to predict the suitable crop for the farmer.

In this work, the recently sold out vegetable crop seeds information is collected taluk(town) wise and entered accordingly. This information is processed with respect to the area (in size) and particular vegetable. This processed information is stored in the central data store. The farmer or any person can see this information by selecting the particular taluk's(town) or can avail entire state information about recently cultivated crop. The crop vegetable crop pests and pesticide related information is stored with respect to X crop's and the farmer can get this information for vegetable crop monitoring purpose. The farmer can also avail the information about the cultivation based on the type of soil and date of cultivation.

The paper is organized in 4 sections. Section II describes about the proposed methodology. In Section III briefly elaborated the implementations and results. The section IV is about the conclusion and future scope.

2. PROPOSED METHODOLOGY

In this section, the proposed methodology is shown to counter the problem of the price rise in farmer's point of view. The problem of farmer as explained is availability of vegetable crop cultivation related records of distant places. The majority of farmers also lacks the pest, pesticide and cultivation methods related information. These all issues make the farmer suffer and hence the price will remain unpredictable.

The platform has to be built, which holds all the cultivation related information about the vegetable crops of various places. The platform may be android based or the responsive web based. The shopkeeper or administrator has to enter the number of sold vegetable seeds packet from the shop Y which is located in particular area Y1, these entered values are processed and stored in the repository.

The data can be accessed by the farmers, agriculturists or agriculture science scholars for analyses and finding the trend of cultivation of particular crop X.
The farmer can decide after seeing the approximated values of particular crop X, what to be cultivated. The farmer can also opt for the advance search, where he can get the information with respect to the type of soil, date of cultivation and the X crop. This information will also help the farmer in deciding about the cultivation. If the particular X crop is not cultivated by majority of the farmer in various places but that particular crop will not come in particular type of soil then the farmer can take decision about the cultivation, for the farmer the quantity and quality both are equally important. The block diagram Fig: 1 can be used to understand the methodology clearly.

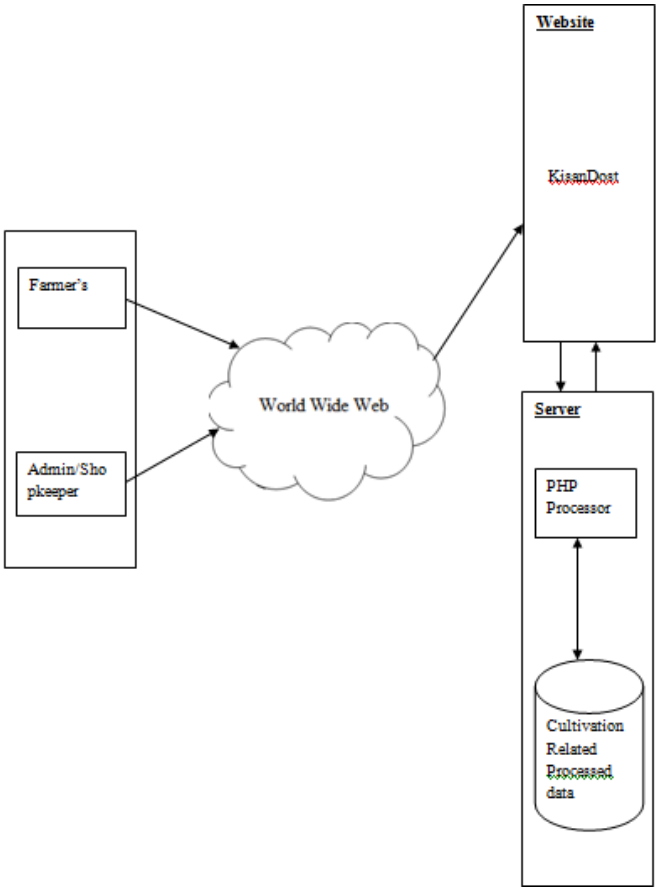

Fig: 1 Block Diagram for the proposed work

2.1 DATA COLLECTION AND PROCESSING

In this phase the data has to be collected from the seeds shopkeepers across the city and rural limits. The shopkeeper can also be able to enter the information directly. The entered data is processed and stored in terms of land measurable units. For ex: 24 – 27 cabbage packets of quantity 300 gram are needed to cultivate 4840 square yards that is equal to 1 acre of land. The above explained procedure is used to calculate the value for every vegetable crop and stored in database, which is then retrieved by farmer to check the trend of the cultivation.

The farmer also faces the problem in using pesticides or in identifying and spraying correct pesticide to the infected vegetable crop at right time. The pests and disease related information can be collected from the agriculture experts or experienced farmer. This data will be stored in data store.

2.2 DATA RETRIVAL

The farmer or agriculturists can retrieve the cultivation related data or the data which is most essential to maintain the crop by getting effected by the insects or diseases at right time. The farmer can use the processed information to take the decision on cultivation or to maintain the vegetable crop to get good yield. The farmer can check area wise data and for different vegetable crop and can take decision to cultivate the crop which is cultivated in less area.

3. IMPLEMENTATION AND RESULTS

The proposed work can be implemented android application based or web based. This work is demonstrated in web based platform. The responsive portal is created which can run in any platform. The portal can be accessed by the administrator and the any person who wants to know about the agriculture related information.

The administrator has to authenticate themselves by providing correct credentials. After they are successfully authenticated, they can start entering the information about the crop seeds. Below are some figures which depict the step wise implementation:

Fig -2: Index Page

The Index page contains the options for the farmer and shopkeeper/administrator to provide information or retrieve information related to the vegetables. The farmer can also repossess other information related to crop diseases, pesticides or can use the formidable opinion about the vegetable crops.

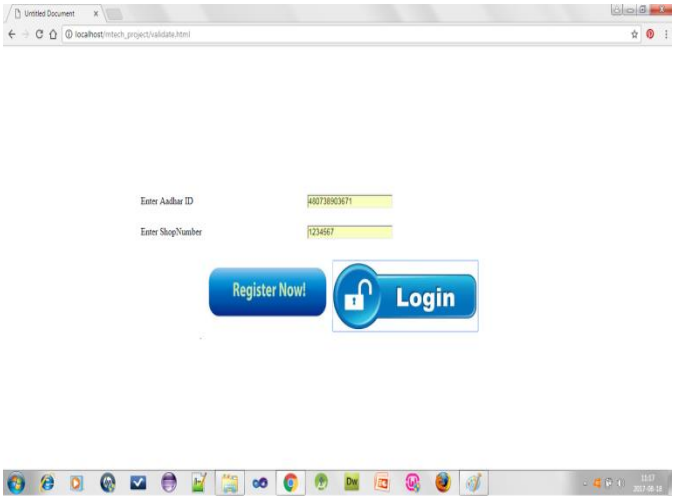

Fig -3: Authentication

The above figure 3 shows the authentication page for the shopkeeper or administrator, where he provides the information.

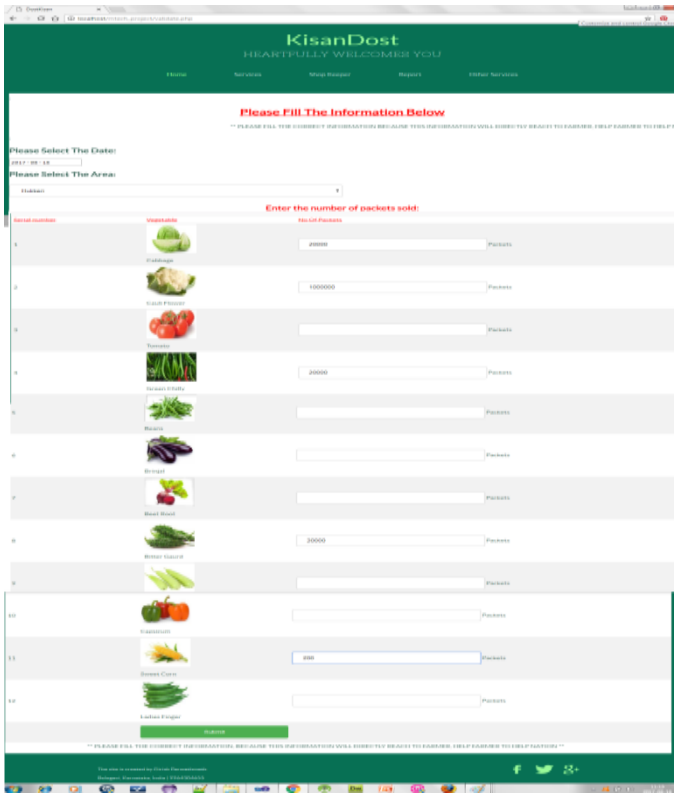

Fig -4: Administrator Section

The above figure 4 shows the administrator section, where the admin provides the information about the vegetable crop.

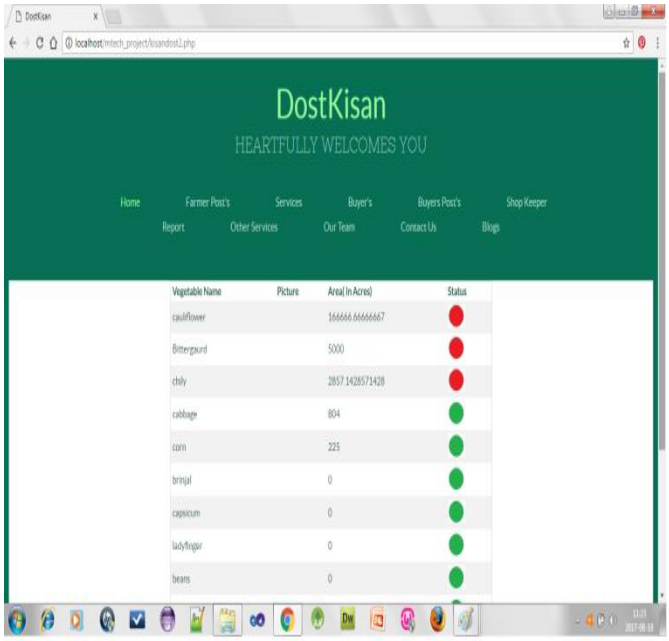

Fig -5: Cultivation Report

The figure 05 shows the cultivation report, the red, green and blue bullet can be seen, indicates the quantities cultivated in large area, medium or small.

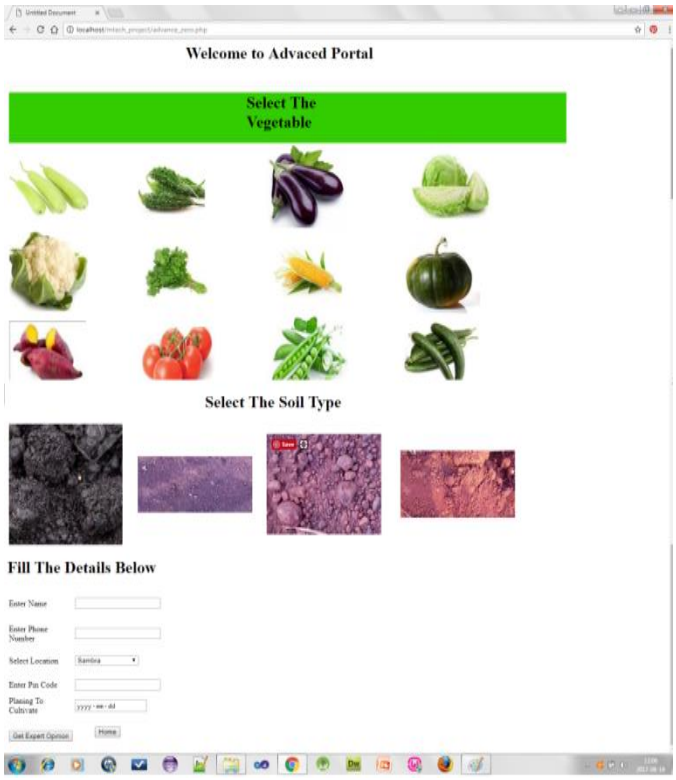

Fig -6: Advance Search

The figure 06 shows the advance section for a farmer to get information about the crop cultivation which depends on the type of soil, date or cultivation and vegetable crop name.

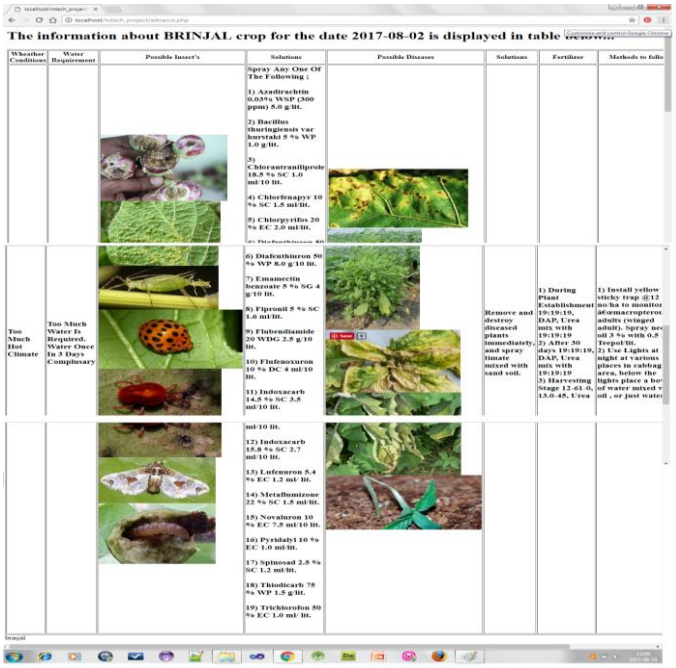

Fig- 7 Results of Search

The figure 07 is the result of search carried out by the farmer regarding the eggplant/aubergine vegetable for sandy soil dated 02-08-2017.

4. CONCLUSION AND FUTURE WORK

India enjoys large agriculture population and covering entire large geographical area will be most difficult process. The project can be implemented in small areas first like by clubbing few districts and then can implement statewide and then part of the country and so on.

The farmers grow variety of crops which includes vegetables, cereals, fruits, silks etc, again in the vegetables sector we find so many variety like green vegetables, red, yellow etc. The cereals like rice, wheat, bajra, soyabean etc. The project can be implemented by considering few vegetables at initial phase and then later can be used for all types of crops. The method which is followed to minimize the impact of loss to the farmer directly and to the country's GDP indirectly.

The methodology used in this project is the one of the aspect, which contributes some part in solving the biggest problem of the farmers a producers and the buyer a consumer. The project can also be taken in direction of guiding a farmer in growing high quality crop and helps in using modern technologies.

This project can be modified to support the artificial intelligence, image detection and processing techniques, learning the profitable practices by the machine (App in android phone) and gives the suggestion based on future weather report. The farmer will be greatly benefitted by this project.

The work is concluded by putting the methodologies which will help not only the farmer but it will also contributes towards in boosting the GDP and maintain the balance between the production and consumption. The proposed methodology helps in moving forward in the direction of all round development of the farmer and thus the countries growth.

REFERENCES

1. Crop Production Techniques of Horticultural Crops 2013 manual by Tamil Nadu Agriculture University and Bijapur Agriculture University.

2. HORTICULTURE VEGETABLE SCIENCE, Tropical and Sub Tropical Vegetables. BY Dr. T.R. Ghai and Dr. Deepak Arora, Dept. of Vegetable Science, Punjab Agricultural University, Ludhiana.

3. Vegetable practices document by Bijapur Agriculture University.

4. Special issue on "Computational Intelligence in Crop Production," R.E. King and N. Sigrimis.

5. Computers and Electronics in Agriculture, vol. 31, no. 1, 2001.

6. Special issue on "Artificial Intelligence in Agriculture," H. Murase, Guest Edition, Computers and Electronics in Agriculture, vol. 29, nos. 1-2, 2000.

7. Meonghun Lee, Jeonghwan Hwang and Hyun Yoe Agricultural Production System Based on IoT, Electronic ISBN: 978-0-7695-5096-1

8. www.wikipedia.com

9. www.raitamitra.in

10. Advances in control of Agriculture and the environment by Nick Sigrimis, Panos Antsaklis and Peter P. Groumpos.

11. http://des.kar.nic.in/docs/ASCR-2010-11.pdf

12. Agriculture Contingency Plan for Districts, KAR21- Belgaum 31.05.2011.pdf

13. www.ncap.res.in/upload_files/workshop/wsp13.pdf

14. http://www.nda.agric.za/docs/Brochures/ProdGuideCabbage.pdf

15. http://pdf.usaid.gov/pdf_docs/PNABY602.pdf

16. Crop Recommendation System for Precision, Agriculture S.Pudumalar*, E.Ramanujam*, R.Harine Rajashree, C.Kavya, T.Kiruthika, J.Nisha.

17. Farmer's Analytical Assistant, Aakash G Ratkal, Gangadhar Akalwadi, Vinay N Patil and Kavi Mahesh, KAnOE - Centre for Knowledge Analytics and Ontological Engineering, PESIT, PES University, Bangalore, India

18. Big Data Analytics Architecture for Agro Advisory System, Purnima Shah, Deepak Hiremath and Sanjay Chaudhary, School of Engineering and Applied Science, Ahmedabad University, Ahmedabad, India

19. An Appropriate Model Predicting Pest/Diseases of Crops Using Machine Learning Algorithms, Hemantkumar Wani, Faculty of Management Studies, A.C.Patil College of Engineering ,University of Mumbai

20. Plant Diseases Detection Using Image Processing Techniques, Shivani K. Tichkule Electronics and Telecommunication, , Prof. Dhanashri. H. Gawali Electronics and Telecommunication, NBN Sinhgad School of Engineering, Pune,India.

21. Krushi samriddhi: a decision support system for farmers to get high crop yield Tanuja R. Patil, Shamshuddin K, Rajashekhar Patil, 4Sadanand P ,Asso.Professor, Asst.Professor, President, B.V.B.College of Engineering and Technology, Hubli, Karnataka, India.

22. Krishi-Bharati: An Interface for Indian Farmer Soumalya Ghosh, A. B. Garg, Sayan Sarcar, P.S.V.S Sridhar, Ojasvi Maleyvar, and Raveesh kapoor University of Petroleum & Energy Studies, Dehradun, Indian Institute of Technology Kharagpur, India

23. Efficient Decision Support System for Agricultural Application ,R.Devi, R.Hemalatha, S.Radha, Member, IEEE ,PG Scholar, ECE Department, Associate Professor, ECE Department, HOD, ECE Department, SSN College of Engineering, Chennai, India.

BIOGRAPHIES

Prof. Shanmukappa. A. Angadi is a professor and Head of the Department of computer science and Engineering, center for PG Studies, Visvesvarayya Technological University, Belagavi Karnataka, India.
His research areas are Image processing and pattern recognition, Soft computing, Internet of things (IOT) and Graph Theoretic Technologies.

Mr. Girish N. Parwathmath
Student
Department of Studies in Computer Science & Engineering, VTU Belagavi, India 590018