Scientific Journal of Impact Factor (SJIF): 5.71

e-ISSN (O): 2348-4470
p-ISSN (P): 2348-6406

International Journal of Advance Engineering and Research Development

Technophilia-2018.

Volume 5, Special Issue 04, Feb.-2018 (UGC Approved)

Crop Yield Prediction App

Cropiest App

Ms.Mande S.R.[1], Ms. Thorat S.E.[2], Ms. Momin S.S.[3], Ms .Momin A.M.[4], Mr.Gaikwad M.S.[5]

[1]*Computer Engineering, Jaihind Polytechnic, Kuran*
[2]*Computer Engineering, Jaihind Polytechnic, Kuran*
[3]*Computer Engineering, Jaihind Polytechnic, Kuran*
[4]*Computer Engineering, Jaihind Polytechnic, Kuran*
[5]*Computer Engineering, Jaihind Polytechnic, Kuran*

Abstract — *India's economic growth mainly depends on agriculture yield production and their related agro industry products. The prediction of agriculture yield is the toughest task for agricultural departments across the world which directly as well as indirectly affects on economic growth rate of country. The agriculture yield depends on various factors. Particularly countries like India, majority of agriculture growth depends on weather forecasting, area under plantation, amount of importing/ exporting of the crop which is highly unpredictable [1].*

Therefore, Farmers are struggling to produce the yield and to get desirable prize or rates for their products so; we are creating an agriculture data. This data could be gathered, stored and analyzed for useful information [2].

Estimating the yield is essential to optimize good prize to crop production and distribution. The main aim of developing our app is to providing a new crop yield prediction method based on data analysis technique, which differs with traditional methods in the structure of handling data.[4].

Keywords *– agriculture yield growth, agriculture yield prediction, food security, weather forecasting, economic growth.*

I. INTRODUCTION

India is top agricultural production hub in the world. But lack of scientific data about area under particular crop result in either over plantation or under plantation of a particular crop. This result in fluctuation of produce of crop and hence fluctuation of price resulting in loss to both farmers and consumer.

The ratio between agricultural input and output account for agricultural productivity. In agriculture, crop yield is measured as a degree of the yield per unit area of the cultivated land and the seeds produced from the same crop. The reasons for low productivity of Agriculture productivity like unavailability crop plantation details for that season, unreliable monsoon and improper marketing of crops Etc. To understand any country's economic development, crop yield conditions monitoring is very much essential. Crop yield has a direct impact on National and International economies annually and the yield predicted plays a significant part in the food management.

Forecast of the Agriculture yield at the time of sowing is very useful for farmers' to plan their further activities . It will be useful to do advance planning, formulation in regard to import/export decisions, crop procurement, price structure and its distribution [1].

Hence to established a system to collect appropriate data and then analyzing it for informing farmer so that he can take informed decision to whether or not plant a particular crop.

II. EXISTING SYSTEM

Currently only the main crop sowing record is checked. The statistics are collected by the Revenue Department and given to the Agriculture Department. This system was started in British times in **1960 or 1970**. It was meant to register crop by visiting the field directly through the ticket. But most of the time, Talathi is asking people to register with Chawdi.

In addition, there is a continuous set of regulatory and agricultural accounts in the two accounts. According to the law, land records are subject to revenue department. Actually, this mechanism is reluctant to do the job of registering the statistics but is also not ready to give up his rights. Therefore, the method of collecting these statistics is currently inaccurate.

The last year's figures have changed dramatically with paper horses dancing. Last year, the record of the cultivated crops was done on seven occasions. Although the farmer has opted for a different crop, it is often said that the government records were made from the same crop last year. When the country's statistics are released by the Union Agriculture Ministry, there is a lot of difference between the area and the sown area when the wrong figures are gathered from the village level at the district level, district level. This does not make the forecast of the product accurate. Therefore, the government also has difficulty in planning a situation where there is a scarcity or non-production of a farm.

The fluctuation in vegetables causes the fall or increase in crop cultivation, along with the climate. However, its figures are not available immediately. Therefore, it is taken into account only after a large increase or increase. The problem lies with both the consumer and the farmer. It is not possible to make suitable planning for any component of the farm chain[5].

III. PROPOSED SYSTEM

Instead of depending on middle person or officials this app relies on farmers register the crop they have planted in their farms. Farmers can be mandatory after all crops have been sown immediately. Farmers will come forward and report if the government will help them on the basis of these figures, due to drought or excessive rainfall. The data of meteorology department is also recorded for that season .Also the data of import export is added in this app for that season.

All this data is processed for particular season and its relationship with price is established. The continuous record of 5 or 6 seasons will give enough data to predict the price of crop for farmers at any stage of season i.e. how much plantation of that crop has happened till now, what was previous seasons plantation and price for that yield production , what are predictions about atmosphere for this season and finally should he plant that crop or go for another one using above data.

In the present system, only major crops are collected. According to the new method, it will be possible to register all crops including onion, tomatoes, cabbage, pepper, and vegetables. And it's not too expensive.

In current system, farmer do not have a simple and exact information like what are the rates for that particular crop?, how much plantation done for the same season in previous year for that crop?, what are the weather conditions for that season? .That only means that farmer does not get the appropriate reasons of why they are not getting the desirable rates to their crop. And to solve this issue, In this system we providing all the information related to weather, crop yield prize ,crop yield production, crop import/export details and our prediction on that data which can be help farmers in planning of their seasonal crop.

- **MODULES**

3.1 Data Input Module

3.1.1 Adding Existing Data To The System:

- Meteorological Data
- Crop Plantation Data
- Crop Yield Data
- Crop Prize Data
- Crop or Farm Produced Import/ Export Data

3.1.2 Analysis Of Data

Analysis the above data for last three years and developing relation between the crop prize for particular year and other factors like weather forecasting, crop plantation, import export details, production of particular crop of that year.

3.1.3 Prediction Of Prize Dynamically (Live)

Predicting the prize of crop for current year by using current factors i.e. meteorological data, planted area and previous relation between their data and prize for last three years.

- This prediction will change dynamically i.e. as area under plantation and meteorological data changes.
- This should be predicted differently for different crops and it should help the farmer for decision making of the crop he wants to plant.

Other modules are use of the data available to us for analysis in first module i.e. meteorological data, crop prize data throughout India , Import/Export and prize overseas.

3.2 Meteorological Data (Weather)

Meteorological data available with us for analysis can be also provided farmer directly through the module.

3.3 Crop Prize Data

The government portal ENAM for prize is not so useful or reliable to the farmer. It is hard to understand. So by adding crop prize data in our app we are providing prize of crop in various APMC's throughout country directly to the farmers. This would also include E-Commerce platform for connecting farmer directly to wholesaler (Trader) registered with various APMC's (different than farmer to retailers) only traders register with APMC's would be on this portal.

3.4 Import/Export Details

The data about import/export and prize of crop in international market will be provided to farmer for decision making.

3.5 Chat And Expert Opinion Platform

In this, farmer can add their own blogs also we providing the new technology related articles, and different useful information.

IV. CONCLUSION & FUTURE SCOPE

It helps to achieve stabilize market condition of products. It minimizes wastage of vegetable. Gives more accurate prediction of crop plantations to the farmer than the existing system. Vegetable prize data will help farmer to get prize of crops in different APMC's. It also provides platform to farmers and traders. This app provides all useful information to farmer at the time of sowing.

Also this app will make use of geo tagging and remote sensing techniques to verify the plantation data. The digital records with government such as 7/12 or survey number could be used to verify. In future we can take hardware support to verify the entry of plantation. As the India moving towards digitalization we will get large amount of accurate data, so the prediction becomes more correct.

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