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Automated E-Farming Technology with Satellite Monitoring

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Abstract
We industrialized a system to allocate satellite produces to users in realties.GPS based Soil information is a mechanism for soil properties across the world. Soil data set is a forecast models are close-fitting soil profile interpretations and a series of eco-friendly covariates. This site will monitor the farmers in all the characteristics, the current market rate of different produces, the total sale and the earned profit for the sold products, access to the new farming techniques through e-erudition and integrated approach to view different administration's agriculture arrangements including the recompense schemes for farming. The Advanced procedures and the Automated machines which are leading the world to new heights, is been covering when it is concerned to Farming, either the lack of awareness of the innovative accommodations or the inapproachability leads to the scarcity in Farming.
Keywords: E-Farming, GPS satellite, Soil Test

1. Introduction

Agriculture has an ancient history nearly dates back to thousands of years. Moreover, its advancement has been pushed by implementing the several new systems, practices, technologies, and approaches with the time. It employs over one-third of the global workforce [1]. The agriculture is the backbone of an economy for many countries and executes a significant contribution to the development of the economy for underdeveloped countries. Besides, it steers the process of economic prosperity in developed countries. Several research studies concluded that overall world agriculture uses approximately seventy percent per year available fresh water to irrigate only seventeen percent of the land. Another side, the total available irrigated land is gradually decreasing due to the rapidly increasing of food requirements and effects of global warming.

As the evolution of humankind from hunters and gatherers to agrarian societies, the efforts have mainly focused on improving the plant yield and productivity by genetic changes, cultural or husbandry, management practices, or by developing and introducing plant protection measures. Accordingly, in the last and present century, peoples have started exploring the possibilities by adopting different modern techniques in agriculture. The adoption of the precision farming methods in agriculture is one of the excellent examples. The purpose is to try and mechanise them in agriculture to prevent the crop losses due to sudden climatic changes, soil-borne diseases, pest attaches, and so on.

Many research studies have been suggested and reported that problems and challenges of agriculture could overcome by adopting the precision farming methods. At present, several countries are increasing their farming productivities by implementing the precision farming methods.

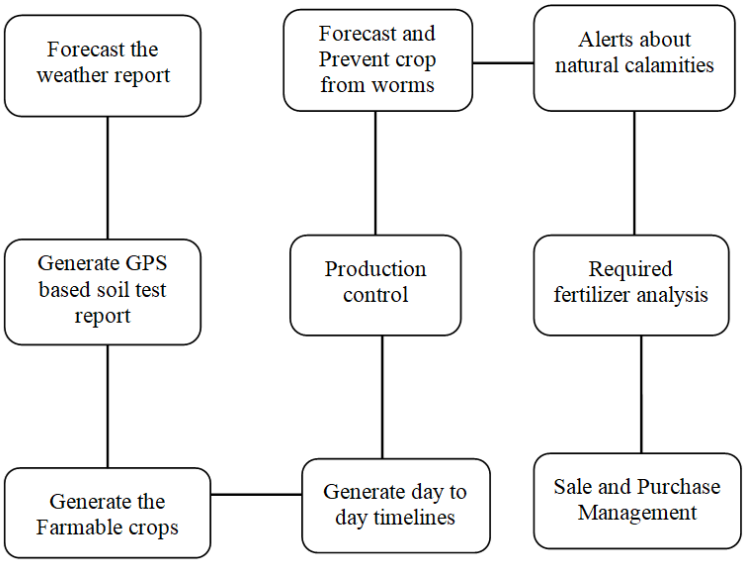


Figure.1. System Architecture

2. Existing System

Real-time crop monitoring system using satellite data reception and management system is the existing system Using the satellite data reception and management system, real-time checking of rice straw roasting in Punjab was predictable. The system provided information of the area under active fire on real-time basis. It was apparent that about 15 million loads of rice straw were burned in Punjab.The system will be useful to assess the enormousness of paddy straw burning and pollution problem including conservatory gas emission due to straw burning.

2.1 Drawbacks

1. This system mainly concentrates on fire incidents.
2. Any precautions about the crops are not allowed to the user.
3. It does not work under soil and meteorological conditions related issues.

3. Proposed System

In this paper, we report thedisadvantages of Real-time crop checkingstructure using satellite data treatment and administration system. In our proposed system we bring together satellite data API's (Application program interface) without any use of mechanisms and algorithms. We hosted soil evidence, weather information along with real time crop specialist care systems. Soil information system is under GlobalSoil Reference and Information Centre which provides world soil statistics at anytime from anywhere.

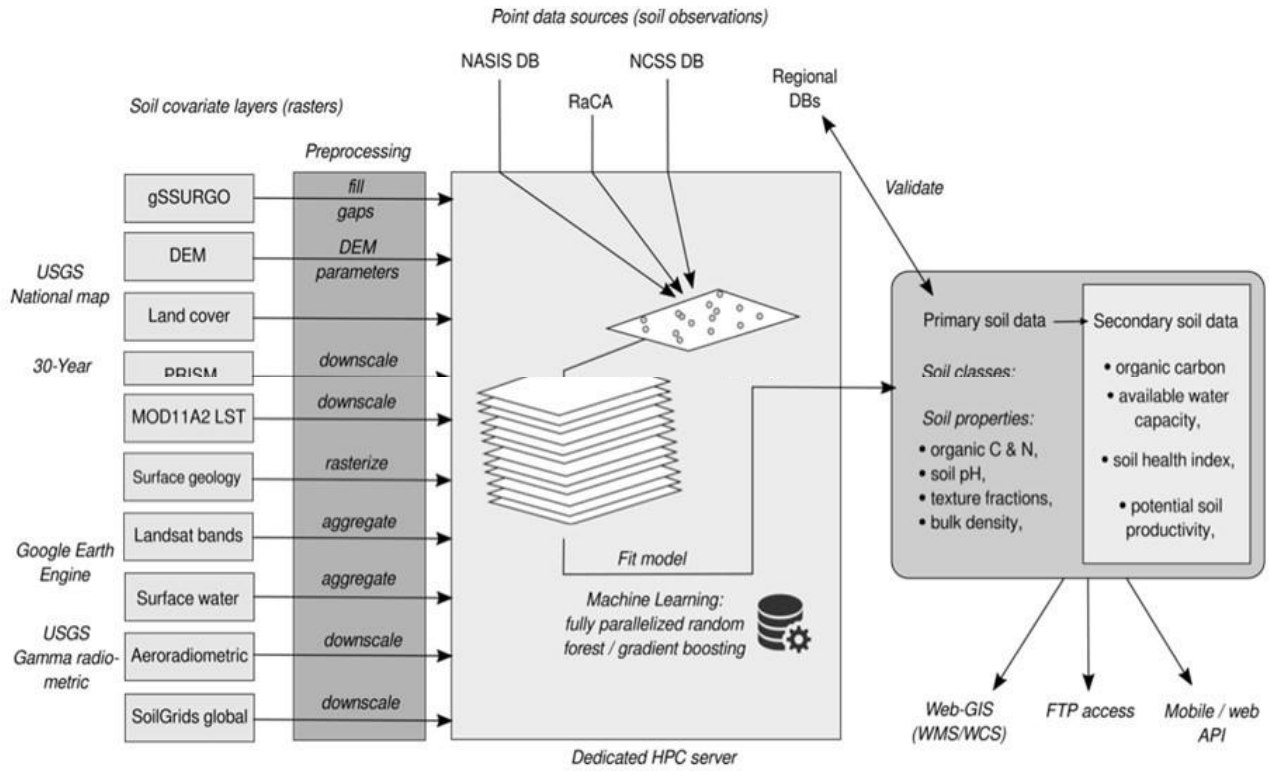
3.1 Advantages

a. This system explains about everything regarding farming.
b. Several API's are introduced for best outcome results.
c. This system is used to forecast the exact requirement of Fertilizers and Seeds.
d. This provides GPS based soil health reports.
e. Used to make available day to day timelines for the farmers till the end of the crop.

3.2 Modules

a. Soil grids
b. System layers
c. Product functionalities
d. Satellite monitoring

3.3 Solid Grids



d the

Figure.2. Improved and consistent standardization across the different point datasets.

Texture fractions demonstrated and mapped not self-adequately from each other, but as compositional data with the sum of the fractions unnatural to 100%.

4. System Layers

There are mainly four layers which are mentioned below:

- Weather layer

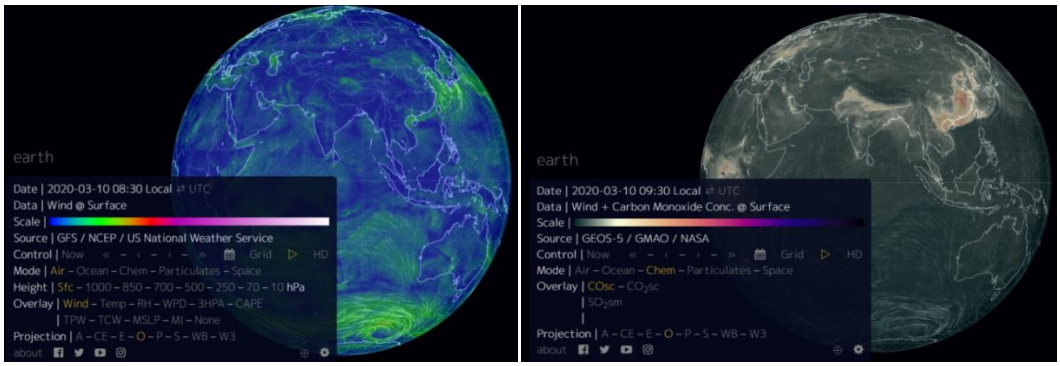


Figure.3. Weather layer

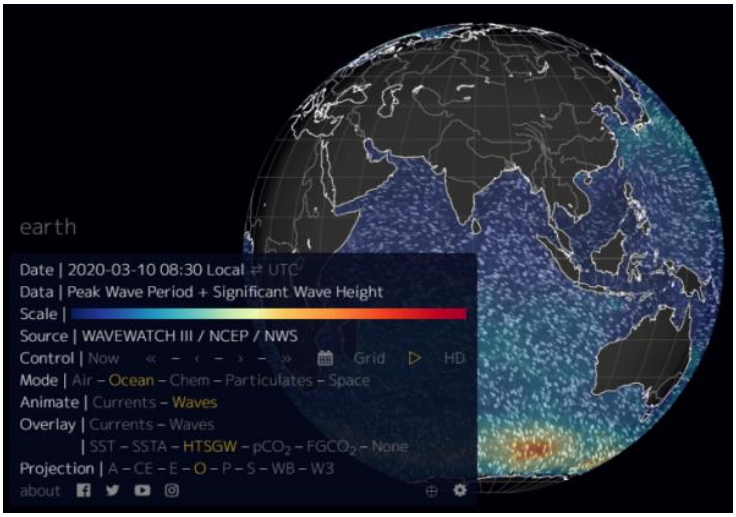


Figure.3.1. Satellite Monitoring layer

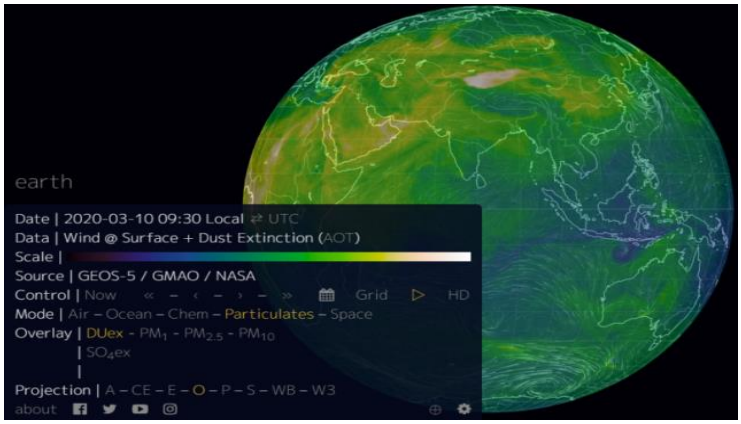


Figure.3.2. Soil health reports layer

Figure.3.3. Land GPS

4.1 Product Functionalities

Basically there are mainly 5 ways of generating the farming which are explained below:

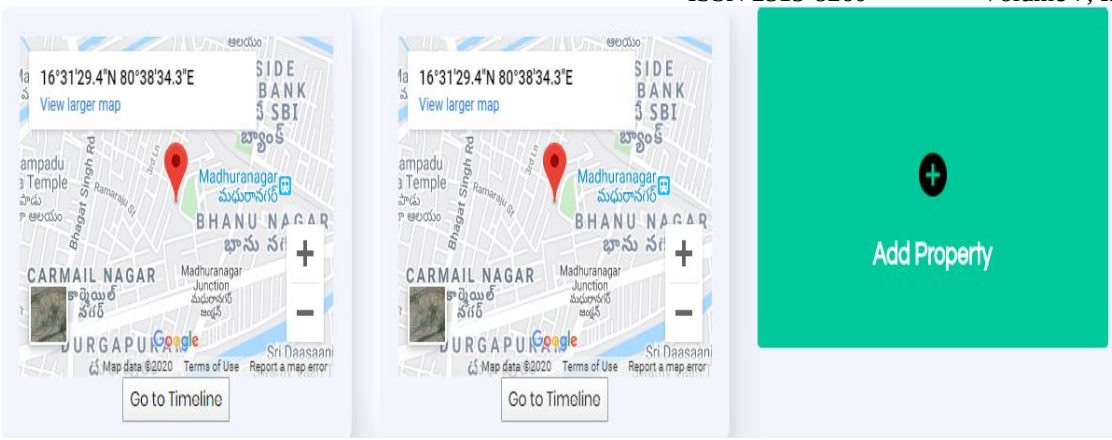


Figure.4. Generate GPS based soil test report, Forecast the weather report

System will map soil health reports with GPS to arrive at location-wise farmable crops
Forecast the weather report based on earth air flow and position of the cloud

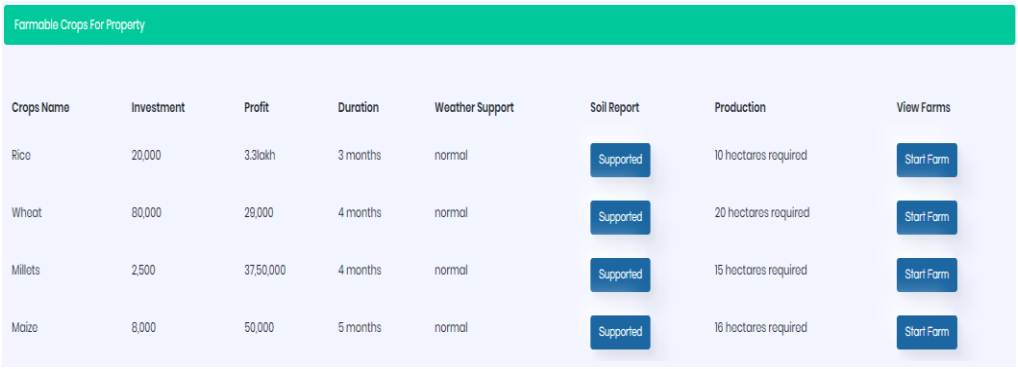


Figure.5. generate the farmable crops

Based upon the soil parameters and weather forecast, system will generate the farmable crops which are suitable for the soil.

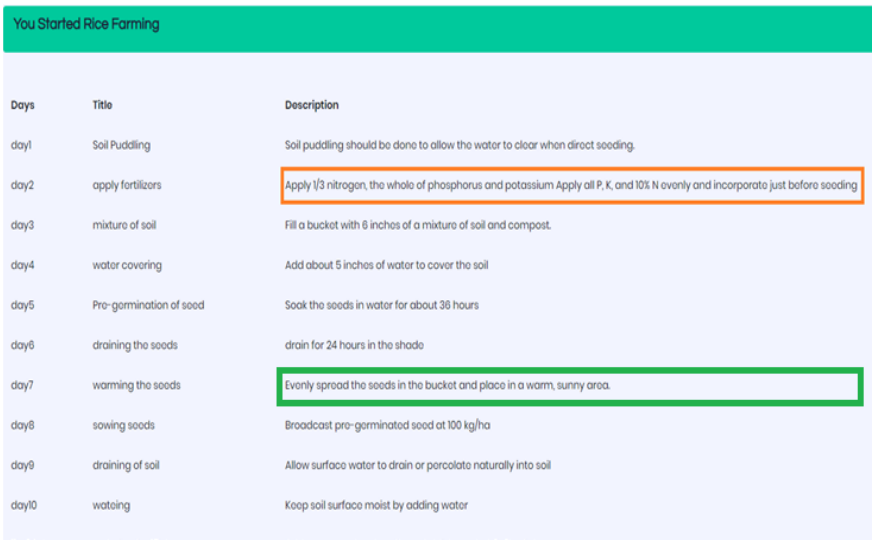


Figure.5.1. Day to day time line

Alerts farmers about the worms based on the atmosphere.
Based on the current production, the system will forecast the requirement of Fertilizers

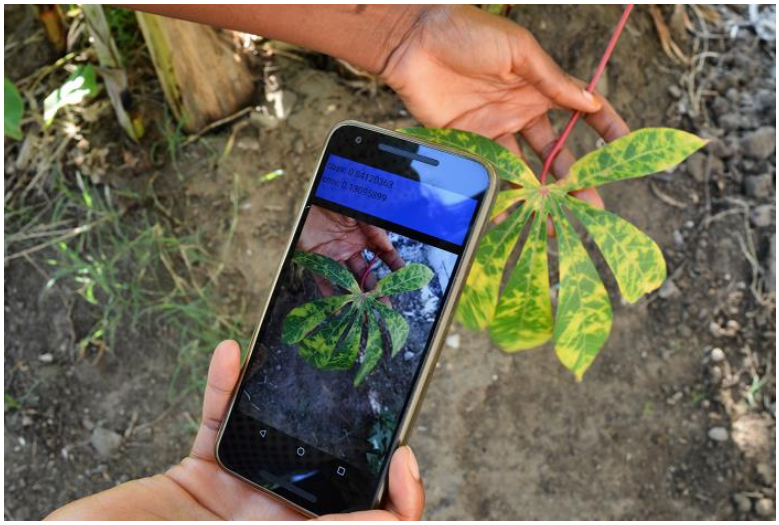


Figure.6.Request Based Crop Monitoring

If the plant is effected farmer is asked to upload a photo of the plant to our system
Our system analyses why the plant is affected and send the report to the farmer
And also suggest the required Pesticides to be used, to the farmer.

Figure.7. Alerts about natural calamities

Our system alerts about natural disasters like hurricanes, floods, and earthquakes etc., which challenge the agricultural production.

4.2 Satellite Monitoring

Figure.8. Satellite monitoring

a. Crop Monitoring
- Our system shows colour variation when our crop is affected with the pests.

b. Production Forecasting
- Production forecast based on last 1961 to 2018 years data
- Based on previous year's production

c. Satellite Based Crop Monitoring
- API(Application Program Interface) to satellite images for the crops
- Our system uses NDVI, NRDE, MSAVI, RECI technologies for crop monitoring

d. Satellite Scouting
- Normalized Index is a popular undergrowth index, but FBN is providing Enhanced Undergrowth index images
- EVI pay compensation for special alterations and alterations due to the ground cover below the canopy

5. Conclusion

Government will get benefited with the purchase and sale of the fertilizers and pesticides as our system forecast the needs. Government will know the seeds requirement for the farmers. Hence there will not be any loss to the farmer, as the supply of the crop is in accordance with the demand. As the demand is in accordance with the supply, price stabilization can be achieved. This system makes our agriculture process stronger and farmers get secured at each and every stage with our forecasting system.

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