LITREATURE REVIEW

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ESTIMATION OF CROP YIELD USING DATA ANALYTICS

ABSTRACT:

Agriculture is the field that enables the farmers to grow ideal crops in accordance with the environmental balance. In India, wheat and rice are the major grown crops along with sugarcane, potatoes, oil seeds etc. Farmers also grow non-food items like rubber, cotton, jute etc. More than 70% of the household in the rural area depend on agriculture. This domain provides employment to more than 60% of the total population and has a contribution to GDP also (about 17%). In the farm output, India ranks second considering the world wide scenario. This is the widest economic sector and has an important role regarding the framework of socio-economic fabric of India. Farming depends on various factors like climate and economic factors like temperature, irrigation, cultivation, soil, rain fall, pesticide and fertilizers. Historical information regarding crop yield provides major input for companies engaged in this domain.

Agriculture sector is struggling to increase the productivity of crop in India. Monsoon rainfall is the main source of water for more than 60 percent of the crops. Smart agriculture driven by Information Technology is the emerging trend in the research in this area in recent days. One of the areas being explored is the problem of yield prediction which is a major concern. Data mining techniques are being widely used as a part of solution for crop yield prediction. Various data mining techniques are under evaluation for estimation of crop production of the future years. Data mining is the process in which the hidden

patterns are discovered using analysis of large data sets. The data mining and data analytics techniques use artificial intelligence, statistics, machine learning and database system. In data mining, unsupervised and supervised methods are being used. In unsupervised learning, clusters are formed using large data sets and in supervised learning classification are done based on the data sets. In clustering technique, 'data points' are examined to group them into 'clusters' according to specific parameter. The data points in same cluster have less distance compared to data points of different clusters. The analysis of the cluster divides data into well organized groups. The natural structure of the data is captured by these wellformed groups.

A Critical Review Agriculture fulfils a fundamental need, which makes it crucial for human survival. It is a well-known fact that in India, agriculture employs the bulk of the population (about 55%). There are obstacles to expanding crop production in India because of weather changes. To reach desired crop yield goals has become a difficult undertaking in agriculture. Numerous elements that directly affect the yield and productivity of the crops must be taken into account. Predicting crop productivity is one of the key elements of agricultural techniques. Before planting seeds in their fields, farmers require knowledge about crop yield in order to increase agricultural output. Data analytics is one such trend that has permeated the use of technology in agriculture in recent years

CROP YIELD PREDICTION USING MACHINE LEARNING:

since its invention and inception, be the prime and preeminent activity of every culture and civilization throughout the history of mankind. It is not only an enormous aspect of the growing economy, but its essential for us to survive. Its also a crucial sector for Indian economy and also human future. It also contributes an outsized portion of employment. Because the time passes the requirement for production has been increased exponentially. So as to produce in mass quantity people are using technology in an exceedingly wrong way. New sorts of hybrid varieties are produced day by day. However, these varieties dont provide the essential contents as naturally produced crop. These unnatural techniques spoil the soil. It all ends up in further environmental harm. Most of these unnatural techniques are wont to avoid losses. But when the producers of the crops know the accurate information on the crop yield it minimizes the loss. Machine learning, a fast-growing approach thats spreading out and helping every sector in making viable decisions to create the foremost of its applications. Most devices nowadays are facilitated by models being analyzed

before deployment. The main concept is to increase the throughput of the agriculture sector with the Machine Learning models. Another factor that also affects the prediction is the amount of knowledge thats being given within the training period, as the number of parameters was higher comparatively. The core emphasis would be on precision agriculture, where quality is ensured over undesirable environmental factors. So as to perform accurate prediction and stand on the inconsistent trends in temperature and rainfall various machine learning classifiers like Logistic Regression, NaÃ¯ve Bayes, Random Forest etc. are applied to urge a pattern. By applying the above machine learning classifiers, we came into a conclusion that Random Forest algorithm provides the foremost accurate value. System predicts crop prediction from the gathering of past data. Using past information on weather, temperature and a number of other factors the information is given. The Application which we developed, runs the algorithm and shows the list of crops suitable for entered data with predicted yield value.

ANALYSIS OF CROP YIELD PREDICTION USING DATA MINING TECHNIQUES:

India's agricultural sector is struggling mightily to increase crop productivity. The crop still depends on monsoon rainfall for more than 60% of its production. Recent advancements in the field of agricultural information technology have become an interestingresearch area for crop yield prediction. Based on current knowledge, the issue of yield prediction is one that needs to be resolved. accessible data For this, data mining techniques are a superior option. Various data mining methods are employed, andassessed in agriculture to predict crop yield for the following year. In this essay, agricultural yield is briefly analysed. combining density-based clustering and the Multiple Linear Regression (MLR) technique to make predictions for the chosen region, i.e.Indian state of Andhra Pradesh's East Godavari district.

Crop Production using Predictive Analysis:

This work is to construct a model for testing the soil fertility. It also suggests the crop which has to be planted depending upon the value obtained from the sensor. It also provides the regional wise information about the crop in the form of graph. We have farmer chat where the farmers can share and get idea from the expert by registering in this application. It also suggests the fertilizer which has to be added to the soil in order to increase the crop productivity. It helps the farmer to analyze the fertility of their yard and plant the better crop to increase their productivity and profit. It also provides the information about the fertilizer

to be added in the soil and also provide the information about the nearby fertilizer shop