Estimate the crop yield using Data analytics

Introduction

Agriculture is the backbone of Indian Economy. In India, majority of the farmers are not getting the expected crop yield due to several reason. The agricultural yield is primarily depends on weather conditions. Yield prediction is an important agricultural problem. The volume of data is enormous in Indian agriculture. Data Mining is widely applied to agricultural problems. Data mining is used for large data sets and establish useful classifications and patterns in the data sets. Agriculture is an important for human survival because it serves the basic need. Due to variations in climatic conditions, there exists bottlenecks for increasing the crop production in India. Various factors are to be considered which have direct impact on the production productivity of the crops. Farmers need information regarding crop yield before sowing seeds in there fields to achieve enhanced crop yield. The use of technology in agriculture has increased in recent year and data analytics is one such trend that has penetrated into the agriculture field. Efforts are going on to understand how big data analytics can agriculture productivity.

Literature survey

The researcher express that large amount of data which is collected and stored for analytics. There are several applications of data mining techniques in the fields of agriculture. The researchers implemented[4] **k** means algorithm to forecast pollution in the atmosphere, the **k** nearest neighbours is applied[12] for stimulating daily precipitation and other weather variables and different possible changes of the weather scenarios or using[14] support vector machine. Soil profile descriptions were proposed [15] by the researcher for classifying soils in combination with **GPS** based technologies. They were applied **k** -means approach for the soil classifications in similar approach, crop classifications using hyper spectral data was carried out [1] by adapting one of the data mining approach.

India is basically agriculture based country and approximately 70% our country economics is directly or indirectly related to the agricultural crops. The principle crop which occupies the highest(60 - 70%) percentage of cultivable land in the Indian soil is the paddy culture and it is the major crop especially in Central and south parts of the India. The enhanced yield of the rice crop depends largely on the water availability and climatic conditions. Big data analytics method relates to the rice crop yield prediction and estimation will certainly support the famous to understand the optimum condition of the significant factors for the rice crop yield. Hence can achieve higher crop yield.

Advantages

[1].Predicting productivity of crop in various climatic conditions can help farmers and other partners in essential basic leadership as for as agronomy and product decision .

[2].This model can be used to select the most excellent crops for the region and also it's yield there by improving the values and gain of farming also .

[3].The main advantage of intensive farming is its increased performance when higher yields are harvested from smaller territories .

[4] . This brings economic benefits to landowners and provides food for the growing population.

[5].Intensive agriculture fully satisfies the market demand even in densely inhabited areas.

[6].It also requires less labour compared to eco friendly farming methods since chemical pest and weed controls work faster and are easier to implement.

Disadvantages

[1].The high yield crops require more water and fertilizers as compared to the normal varieties of crops.

[2].They require frequent weeding.

[3].Continuous use of pesticides.

[4].The high yield crops, when compared with traditional varieties are generally more susceptible to diseases.

[5].Crops instead of forage or herding take a lot of work to plant, care for and process.

[6].Sometime fertility and productivity of the soils is lower, if suitable soil management practices or not followed.

[7].soil structure may be deteriorated.

[8].Increase infestation of pests, diseases and weeds.

[9].land in a one calendar year know as multiple cropping.

Conclusion

In this procedural the results of two methods were compared according to the specific region. The result so obtained were verified using the data mining techniques namely density based clustering technique. In the subsequent work a comparison of crop yield prediction can be made with the entire set of existing available data and will be dedicated to suitable approaches for improving the efficient of the proposed technique.

Reference

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[3].Tripathi S Srinivas vv, Nanjundiah RS, "Down scaling of precipitation for climate change scenarios :A Support vector Machine Approach ", J Hydrol , 2006,page:621-640.