LITERATURE SURVEY

TITLE: EXPLORATORY DATA ANALYSIS OF INDIA RAINFALL DATA

AUTHOR: ANUSHA GAJINKAR

DESCRIPTION: India is an agricultural country, and the secondary agro-based market will be steady with a good monsoon. The economic growth of each year depends on the amount of duration of monsoon rain, bad monsoon can lead to the destruction of some crops, which may result in scarcity of some agricultural products which in turn can cause food inflation, insecurity, and public unrest. In our analysis, we are trying to understand the behavior of rainfall in India over the years, by months, and in different subdivisions.

TITLE: EXPLORATORY DATA ANALYSIS FOR AGRICULTURAL PRODUCTION IN INDIA

AUTHOR: SIDDHARTH PREMKUMAR

DESCRIPTION: The government of India has made a lot of useful data publicly available. This includes data for agriculture, infrastructure, technology, and so on. And so we can look at some of this data to see if we can glean something meaningful from them. In this study here, we look at the agricultural food production for various grains, portions of cereal, and oilseeds from the year 2001 to 2017. We have also obtained data for annual rainfall in India for these years as a separate dataset and our goal is to see how strongly agricultural food production depends on annual rainfall.

TITLE: ANALYSIS OF AGRICULTURE DATA USING DATA MINING TECHNIQUES: APPLICATION OF BIG DATA

AUTHOR: JHARNA MAJUMDAR, SNEHA NARASEEYAPPA & SHILPA ANKALAKI

DESCRIPTION: In the agriculture sector farmers and agribusinesses have to make innumerable decisions every day and intricate complexities involve the various factors influencing them. An essential issue for agricultural planning intention is the accurate yield estimation for the numerous crops involved in the planning. Data mining techniques are necessary to approach for accomplishing

practical and effective solutions to this problem. Agriculture has been an obvious target for big data. Environmental conditions, variability in soil, input levels, combinations, and commodity prices have made it all the more relevant for farmers to use the information and get help to make critical farming decisions.

TITLE: ANALYZING TREND AND FORECASTING OF RAINFALL CHANGES IN INDIA USING NON-PARAMETRICAL AND MACHINE LEARNING APPROACHES

AUTHOR: BUSHRA PRAVEEN, SWAPAN TALUKDAR, SHAHFAHAD & ATIQUR RAHMAN

DESCRIPTION: This study analyzes and forecasts the long-term Spatio-temporal changes in rainfall using the data from 1901 to 2015 across India at the meteorological divisional level. The Pettitt test was employed to detect the abrupt change point in the time frame, while the Mann-Kendall (MK) test and Sen's Innovative trend analysis were performed to analyze the rainfall trend. The Artificial Neural Network-Multilayer Perceptron (ANN-MLP) was employed to forecast the upcoming 15 years of rainfall across India. We mapped the rainfall trend pattern for the whole country by using geo-a statistical techniques like Kriging in the ArcGIS environment.

Results show that most of the meteorological divisions exhibited a significant negative trend in rainfall on annual and seasonal scales, except for seven divisions. Out of 17 divisions, 11 divisions recorded noteworthy rainfall declining trend for the monsoon season at a 0.05% significance level, while an insignificant negative trend of rainfall was detected for the winter and pre-monsoon seasons. Furthermore, a significant negative trend (−8.5) was recorded for overall annual rainfall.