APPLIED DATA SCIENCE

EXPLORATORY ANALYSIS OF RAINFALL DATA IN INDIA FOR AGRICULTURE

(Literature survey)

Agriculture in india "gamble with monsoon", short term growth rate is linked to annual rainfall, good monsoon ensure high agricultural growth rate during end of the year.In india several rainfall zones(36 rainfall zones),the mean annual rainfall varies as low as 200mm to as high as 11,000mm and large downward deviation in one low rainfall region(north western part of India) and small upward deviation of high rainfall region (north eastern part of India). The average rainfall in country level and divisional level are linked between two variables i.e rainfall and annual agricultural output growth. The high percentage increase of rainfall in previous year results in high agricultural growth and high percentage decline of rainfall results low growth and often resulting in negative growth.Rainfall analysis suggests that annual agricultural growth performance of country depends on two factors:

1) percentage difference in average rainfall of previous year and
2) percentage increase in gross irrigated area of previous year.
3) to access the impact of climate change on rainfall pattern across India

In India,the decreasing frequency of light to moderate rain events have more than offset the increasing frequency of heavy and very heavy rain events to reduce the overall summer monsoonal rainfall in Central India.A spatial and temporal incoherent feature of rainfall necessitates the need to examine its changing pattern because rainfall is one of the most important parameters that influence the agriculture of a region for food production,thus affecting the socio-economic status of resource poor marginal and small farmers.Hence,the following specific objectives

1)to examine the long term trend of temperature across India
2)to identify the year of climate change across India

Mountains are the source of high quality water.They can be said as "sentinels to climate change" as they show more dynamic changes than in plains.In four zones of western Ghats there is a variation in rainfall in different seasons and zones,that is the distribution pattern is different.As the regional heterogeneity in Indian monsoon has become more prominent in recent years,the rainfall variation study needs to be carried out in regional scale.The heavy rainfall spells are mostly common during monsoon season in SW peninsular region.The spatial autocorrelation of mean rainfall is examined by univariate Local Moran's (LISA) index at 5% significance.The rainfall variation in study case is clustered into regions ,indicates its association with regional parameters.

There is a real need for district rainfall climatology for better hydrological and water management and also for agriculture. Crop failure, drought and more extreme cases like famine due to weak or deficient monsoon becomes very critical to the country. It is well known that Indian summer monsoon rainfall displays multi decadal variations in which there is a clustering of wet or anomalies. Trend analysis of percent contribution of rainfall to the annual rainfall were then carried out for each month and for all 36 subdivisions. South-west monsoon is the major rain producing season over country.the June rainfall getting importance as its contribution to annual rainfall is increasing all most to subdivisions.

College Name:ADHIYAMAAN COLLEGE OF ENGINEERING(Autonomous)
Batch no: B11-5A1E

Team leader : SONIYA A
Team members: 1)SANJUKTHAA B
2)SHIVA RAMYA M
3)SUJEETHA BAI K