Ideation Phase

Brainstorm & Idea Prioritization Template

Date	19 September 2022
Team ID	PNT2022TMID54302
Project Name	Estimate the Crop yield using Data Analytics
Maximum Marks	4 Marks

Problem Statement: Crop yield estimation using Data Analytics

Idea Listing:

1. One of the most important occupations for human survival is Agriculture and especially the majority of the population in India is into this. Due to variations in climatic conditions and various other challenges, the Agrarian sector in India is facing rigorous problems to maximize crop productivity. It has become an arduous task to achieve the desired targets in crop yield. Various factors like monsoon rains, rodents, water scarcity are to be considered, which do have a direct impact on the production and productivity of the crops. And thus, crop yield prediction with recent advancements in technology can be one of the important factors in agriculture practices as the use of technology in agriculture has comparatively increased in the recent years.
2. With the decrease of available cultivable land globally and the decreased cultivable water resources, it is almost impossible to report higher crop yield. Agricultural big data analytics is one approach, believed to have a significant role and positive impact on the increase of crop yield by providing the optimum condition for the plant growth and decreasing the yield gaps and the crop damage and wastage. India is basically agricultural country and approximately 70% our country economics is directly or indirectly related to the agricultural crops. The 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. Rice crop cultivation plays an imperative part in sustenance security of India, contributing over 40% to general yield generation. The enhanced yield of the rice crop depends largely on the water availability and climatic conditions.
3. The accurate prediction of crop yield certainly benefits the farmers in choosing the right method to reduce the crop damage and gets best prices for their crops. A research group conducted a work with an objective of accurate prediction of crop yield through big data analytics to assess various crop yield influencing factors such as Area under Cultivation (AUC) interims of hectors, Annual Rainfall (AR) rates and Food Price Index (FPI) and to develop relationship among these parameters. Regression Analysis (RA) methodology was applied to examine the selected factors and their impact on crop prediction and final yield. RA methodology is a multivariable investigation practice which can categorize the factors in to groups such as explanatory and response variables and helps to assess their interaction to obtain a resolution.
4. Analysing the yields of crop is necessary to update the policies to ensure food security. A research group conducted a study with the aim in suggesting a novel data mining method to predict the yields of crop depends on agricultural big data analytics methodologies, which were progressively contrast with conventional data mining methodologies in the process of handling data and model the designs. Study suggested that the method employed should be

user friendly, work based on progressive big-data responsive processing structure, supposed to utilize the existing agricultural significant datasets and would still be used with the larger volumes of data growing at enormous rates.