

**Project Design Phase-I**  
**Proposed Solution Template**

Date	24 September 2022
Team ID	PNT2022TMID02306
Project Name	Project - Estimate the Crop Yield using Data Analytics
Maximum Marks	2 Marks

**Proposed Solution Template:**

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Crop production in India is one of the most important sources of income and India is one of the top countries to produce crops. Where Digital Farming and Precision Agriculture allow precise utilization of inputs like seed, water, pesticides, and fertilizers at the right time for the crop for maximizing productivity, quality, and yields. Most farmers practice traditional farming patterns to decide on crops to be cultivated in a field. Based on analytics farmers can make better decisions for healthy crop production.
2.	Idea / Solution description	India is a country where farming and agriculture based industries are the major resource of economy. Predicting the crop yield well in advance prior to its harvest can help the farmers and Government organizations to make appropriate planning like storing, selling, fixing minimum support price, importing/exporting etc. Predicting a crop well in advance requires a systematic study of huge data coming from various variables like soil quality, pH, essential elements (N,P,K) quantity etc. As Prediction of crop deals with large set of database thus making this prediction system a perfect candidate for application of data mining methodologies which majorly helps in acquiring a knowledge to achieve higher crop yield. The success of any crop yield prediction system heavily relies on how accurately the features have been extracted and how appropriately classifiers have been employed.
3.	Novelty / Uniqueness	Optimizing and improving the accuracy of data visualization. Personalisation and Service provided with deep analysis of data.
4.	Social Impact / Customer Satisfaction	Increasing innovation and productivity.  Reducing waste and improving profits.
5.	Business Model (Revenue Model)	Extreme weather events, such as periods of high temperature, heavy storms, or droughts, can severely disrupt crop production.

6.	Scalability of the Solution	<p>In coming decades, two most significant and important factors found to influence crop yield is increase in the global population and economy, which greatly demands the higher and sustainable agricultural based crop yields.</p> <p>The capacities of food production at global level is going to be very limited due to the less availability of cultivable land, water resources, difficulties in maintaining the sustainable crop production levels, effects of changes in the global climatic conditions and also by various biophysical parameters which influence the crop yield.</p> <p>Keeping an aim of discussing the impact of the various methods practiced in measuring the yield gaps with a spotlight on the local-to-global importance of outcomes, a research group carried out a survey on the various methods applied to estimate yield gaps.</p>
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