

## **Project Design Phase-I**

### **Estimate The crop Yield Using Data Analytics**

#### **Submitted By**

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**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. As per this project we will be analyzing some important visualization, creating a dashboard and by going through these we will get most of the insights of Crop production in India.
2.	Idea / Solution description	<p>Logistic regression is another supervised learning algorithm which is used to solve the classification problems. It is a predictive analysis algorithm which works on the concept of probability.</p> <p>Logistic regression is a type of regression, but it is different from the linear regression algorithm in the term how they are used.</p>
3.	Novelty / Uniqueness	<p>Regression Analysis can be defined as a structured approach which stresses on the analysis of data for the research purpose on decision making and problem solving. There are problems/situations that require simultaneous analysis of multiple variables or objects for efficient decision making. We consider various factors like Area under Cultivation (AUC), Annual Rainfall (AR) and Food Price Index (FPI) that contributes to the yield of crop. In this work, Regression Analysis is used to establish the relationship among these 3 factors and to identify their influence on crop yield. Regression Analysis is a commonly used technique in the research where relationship among the three considered variables (AUC, AR, FPI) has to be established and to identify their effects on crop yield. Crop yield is considered as a dependent variable and AUC, AR, FPI are considered as independent variables. Regression Analysis is used to find the relative strength between a dependent variable and an independent variable i.e. impact of AUC on Yield, AR on yield and FPI on yield. The crop considered for analysis is rice because it is the most common crop cultivated in many areas of India.</p>
4.	Social Impact / Customer Satisfaction	India holds the second-largest agricultural land in the world, with 20 agro-climatic regions and 157.35 million hectares of land under cultivation .Thus, agriculture plays a vital role with 58% of rural households depending on it even though India is no longer an agrarian

		economy. Thus the results obtained from the analysis is useful for the increase of production.
5.	Business Model (Revenue Model)	This is the typical approach to expansion where assets are acquired and added to the current business. Examples including renting or purchasing additional land, adding additional livestock facilities, and leasing and purchasing machinery and equipment. If the expansion is sufficiently large or geographically separated from the current farming operation, it may be operated as an independent entity from a production perspective using the common “replicate” strategy of the industrial sector where an optimal plant size is determined and expansion occurs by a building a new plant. This strategy has been used extensively in the livestock industry where a laying hen, swine, or dairy farm replicates another production site rather than building onto the current site. Some crop farms are exploring the use of the replication strategy.
6.	Scalability of the Solution	can be able to achieve a very high fit of 0.96 at larger sample sizes and 0.93 already at lower sample sizes. Maximising the impact of agricultural interventions through horizontal or vertical approaches. Horizontal strategies often reach more project beneficiaries by, for example, increasing the size of farms or implementing a service or technological innovation over a wider geographical area.