Project Design Phase

Proposed SolutionTemplate

Date	19 February 2026
Team ID	LTVIP2026TMIDS49897
Project Name	Exploratory-Analysis-Of-RainFall-Data-In-India-For-Agriculture
Maximum Marks	2 Marks

Proposed Solution Details

S.No.	Parameter	Description
1	Problem Statement (Problem to be solved)	Unpredictable rainfall patterns create uncertainty in agricultural planning. Farmers struggle with irrigation scheduling, crop selection, and fertilizer planning due to lack of localized short-term rainfall prediction.
2	Idea / Solution Description	Develop a Machine Learning-based Rainfall Prediction System using Random Forest algorithm. The solution is deployed as a Flask web application where users input weather parameters and receive real-time rainfall probability along with agricultural advisory.
3	Novelty / Uniqueness	Unlike generic weather forecasts, this system combines historical rainfall data analysis, ML

		classification (85.69% accuracy), and advisory recommendations in a single lightweight web interface tailored for agricultural decision-making.
4	Social Impact / Customer Satisfaction	Reduces agricultural risk, supports informed irrigation decisions, increases crop yield potential, and improves farmer confidence through data-driven insights.
5	Business Model (Revenue Model)	Freemium web-based model: basic prediction service free for farmers; premium subscription for advanced analytics, district-level insights, or integration with government agricultural systems.
6	Scalability of the Solution	The modular Flask + ML architecture allows future deployment on cloud platforms (AWS/Azure), integration with real-time weather APIs, and expansion to multi-region predictive models.