

Project Design Phase

Problem – Solution Fit Template

Date	04 February 2026
Team ID	LTVIP2026TMIDS55682
Project Name	Exploratory-Analysis-Of-RainFall-Data-In-India-For-Agriculture
Maximum Marks	2 Marks

1. Target Customer

Primary Customers: Farmers dependent on rainfall for crop cultivation.

Secondary Customers: Agricultural planners and policymakers.

2. Core Problem Identified

Farmers face uncertainty due to unpredictable rainfall patterns. Lack of reliable short-term rainfall prediction leads to poor irrigation planning, incorrect fertilizer usage, crop damage, and financial loss.

3. Existing Situation

- Farmers rely on traditional knowledge or delayed weather forecasts.
- Manual decision-making increases risk during irregular climate conditions.
- No simple, localized prediction tool accessible via web interface.

4. Proposed Solution

The proposed solution is a Machine Learning-based Rainfall Prediction System that uses a Random Forest classification model (85.69% accuracy) deployed through a Flask web application. The system accepts weather parameters and provides real-time rainfall probability along with agricultural advisory.

5. Problem–Solution Fit Justification

- The system directly addresses rainfall uncertainty.
- Provides instant prediction instead of delayed forecasting.
- Offers actionable advisory recommendations (irrigation, fertilizer planning).
- Simple web interface ensures usability for non-technical users.

6. Behavioral Fit & Adoption Strategy

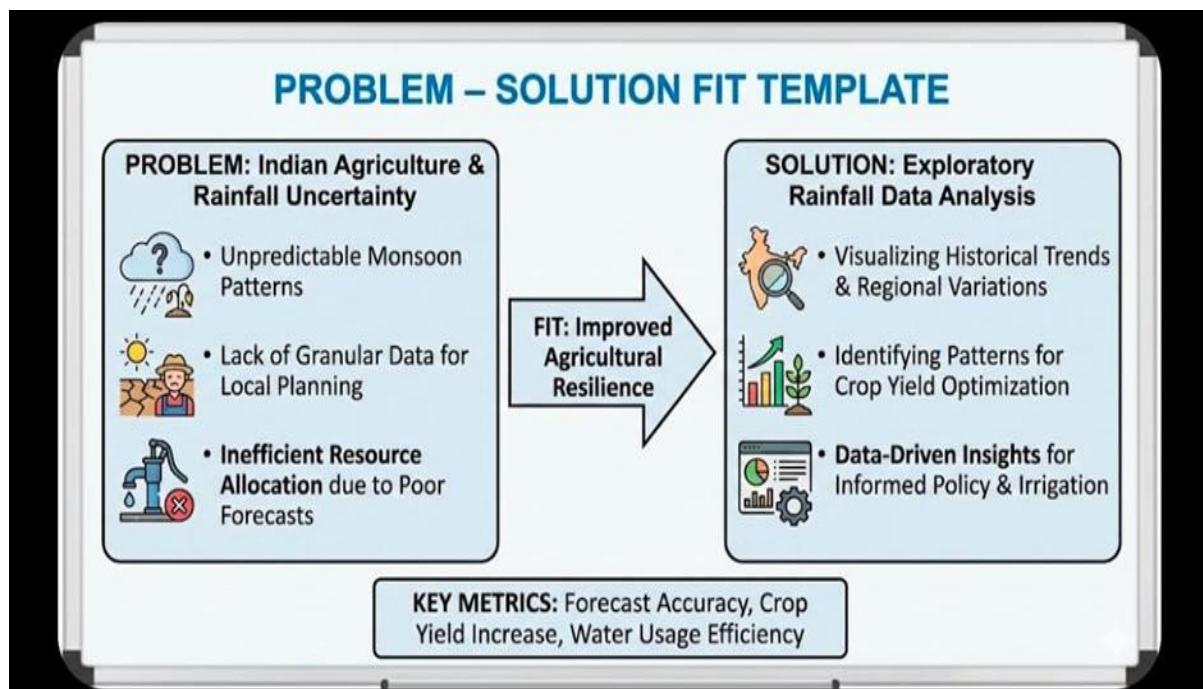
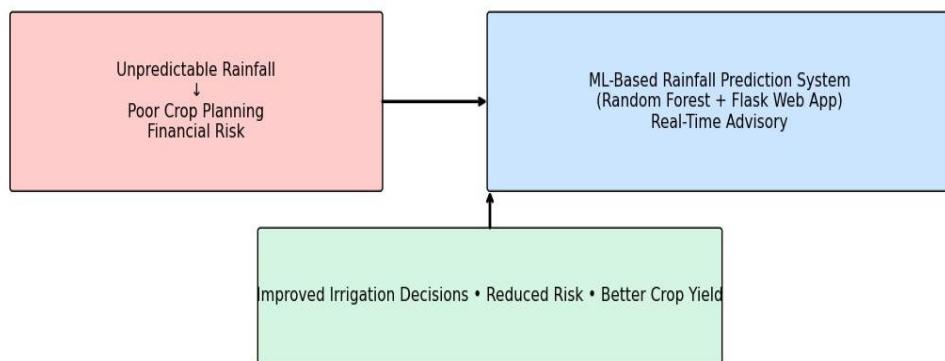
- Farmers already use mobile browsers → Web-based solution fits existing behavior.
- Simple input form reduces complexity.

- Advisory recommendations build trust through practical value.
- Frequent usage encouraged during planting and irrigation cycles.

7. Value Proposition

The Rainfall Prediction System reduces agricultural risk, improves decision-making, and enhances crop productivity by combining data-driven prediction with real-time advisory support.

Problem - Solution Fit: Rainfall Prediction System



Template

Define customer segments, fit into customer limitations		
1. CUSTOMER SEGMENTS(S)	6. CUSTOMER LIMITATIONS	5. AVAILABLE SOLUTIONS
Farmers Researchers Public	Does not provide correct information(Guarantee) knowledge person	Former benefits Help researching for studies
Focus on problem, tap into behavior, understand root cause		
2. PROBLEMS / PAINS	9. ROOT / CAUSE OF PROBLEM	7. BEHAVIOR
Server down(Maintenance) Accuracy issues	Weather conditions climate changes	Weather report Change of item
Identify strong triggers & emotions		
3. TRIGGERS	10. YOUR SOLUTION	8. CHANNELS OF BEHAVIOR
Improved farming	Benefits for farmers Growth cultivation Providing climate details	ONLINE Access to website
4. EMOTIONS		OFFLINE Read newspaper
Does not correct information(change climate)		