**Project Design Phase**
**Problem – Solution Fit Template**

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|---|---|
| Date | 04 February 2026 |
| Team ID | LTVIP2026TMIDS56565 |
| Project Name | Rising Waters: A Machine Learning Approach to Flood Prediction |
| Maximum Marks | 2 Marks |

**Problem – Solution Fit:**

The Problem-Solution Fit simply means that you have found a problem with your customer and that the solution you have realized for it actually solves the customer's problem. It helps entrepreneurs, marketers and corporate innovators identify behavioral patterns and recognize what would work and why

**Purpose:**

1. **Customer Segment(s):** Government disaster management authorities, residents in flood-prone areas, and urban infrastructure planners.

2. **Jobs-to-be-done / Problems:** Predicting flood occurrences with high accuracy and providing actionable insights to minimize impact.

3. **Triggers:** Rapidly rising river levels, heavy seasonal rainfall alerts, or previous history of floods in the area.

4. **Emotions (Before/After): Before:** Anxious and unprepared due to uncertainty. **After:** Informed and proactive due to timely alerts.

**5. Available Solutions:** Manual monitoring of river gauges or general weather reports which may not provide specific flood risk classification.

6. **Problem Root Cause:** Lack of automated tools that can simultaneously analyze rainfall, humidity, river discharge, and terrain information.

7. **Your Solution:** A machine learning model that achieves **88.75% accuracy** and provides real-time classification through an easy-to-use UI.

**Template:**

Project Design Phase-II

**Problem-Solution Fit Canvas: Rising Waters**

Team ID
LTVIP2026TMIDS56565

Define CS, fit into CC

**1. CUSTOMER SEGMENT(S)** CS
- Government disaster management authorities authorities
- Residents in flood-prone areas
- Urban infrastructure planners

**5. CUSTOMER CONSTRAINTS** CC
- Limited technical experise
- Budgetary restrictions for high-end systems ).
  Lack flood integrarated data

**5. AVAILABLE SOLUTIONS** AS
- Manual river gauge monitoring
- Basic flood probablity maps (satic)

Explore AS, differentiate

Detim on JAP, TR & EM

**2. JOBS-TO-BE-DONE / PROBLEMS** JAP
- Predict flood occurrances with high acvide actionle insights to minimize impact
- Integrate diverry of thodwa

**9. PROBLEM ROOT CAUSE** RC
- Lack flood automated tools that sinatadasuly rafnall, river discharge, and terrain information.

**6. BEHAVIOUR** BE
- Manual data collection ad analysis ahe analysis
- Delayed decision-making, river emergencies.
- Reliance genelarazed, non-specfic alerts.

Focus on JAP, understand RC

Identify etong TR & EM

**3. TRIGGERS** TR
- Rapidly rising river levels
- Heavy seasonal raifhall, alerts
- Previous history of the area
- BEFORE: Anxious, prepeative

**10. YOUR SOLUTION** SL

A Flask web application with Random Fonest model (88.75% accuracy that that prccesses 13 fovides 13 features. Provides "DANGER' or SAFE"

**8. AVAILABLE SOLUTION** CH

**ONLINE:** None direclly comparable

**OFFLINE:** news broaas, community warning

Extract online & offline CH of BE

**Fig. 4: Problem-Solution Fit Canvas** for **Rising Waters**. This illustratios alignment between customer problems and ML-based web application solution.