Smart Flood Management System using IoT and Drone

INNOVATIVE SOLUTION FOR CLIMAE RESILENCE

Meet Our Team – The Innovators Behind The Project

- Priti Das Dipa – Team Lead & Visionary Strategist
- Partho Das – IoT Systems Developer
- Allimun Hak Munna – Drone Technology & Field Operations
- Sk Tahim – Community Engagement & Outreach Lead
- Shuvojit Saha – Platform Developer

Problem Statement

- Frequent flooding affects agriculture, education, and local economy
- Lack of real-time monitoring and early warning systems
- Communities are unprepared for rapid response

Objective of the Project

- Develop a smart system to detect, monitor, and manage flood risks
- Reduce damage and improve response time using technology
- Empower vulnerable communities with real-time data and alerts

Targeted SDGs

- SDG 9: Industry, Innovation, and Infrastructure
- SDG 11: Sustainable Cities and Communities
- SDG 13: Climate Action

Proposed Solution

- Integration of IoT sensors for water level and weather tracking
- Use of drones for aerial monitoring and real-time data collection
- Development of a mobile/web dashboard for alerts and updates
- Involving local volunteers in alert distribution

How the System Works (Diagram/Flowchart)

1. Water Level Detected by Sensors
2. Drone Monitors Area
3. Data Sent to Central System
4. Warning Alerts Sent via App/SMS
5. Local Response Activated

Technologies Used

- *IoT Devices (e.g., Arduino, sensors)*
- *Drones with GPS and camera*
- *Cloud Server for data storage and analytics*
- *Mobile/Web App for community interface*

Innovation and Uniqueness

- Combines affordable tech (IoT + drone)
- Real-time localized flood prediction
- Community-driven and scalable
- Adaptable for other disaster types too

Expected Impact

- Early evacuation saves lives
- Protects crops and property
- Supports disaster planning
- Builds climate-resilient communities

Implementation Plan

1. Phase 1: Prototype development
2. Phase 2: Small-scale testing in flood-prone area
3. Phase 3: Partnership with local authorities and NGOs
4. Phase 4: Nationwide rollout

Challenges & Mitigation

- Challenge: Cost of devices
- Solution: Use of low-cost components

- Challenge: Internet access in rural areas
- Solution: Offline SMS alert system

- Challenge: Community trust
- Solution: Local volunteers and awareness campaigns

Future Scope

- AI-based flood prediction models
- Integration with government warning systems
- Expansion to landslide and cyclone management
- Open-source platform for wider adoption

Conclusion

- A smart, scalable, and sustainable solution
- Tech + community = flood resilience
- We are ready to make a real impact!

Thank You!

“Five minds. One mission. Building flood-resilient futures with smart technology”