

Delhi Under Water?

Building a Smarter Monsoon-Ready City

AI, IoT & Governance for Flood-Resilient Urban India



Smart City Tech:

IoT, GIS & AI for Flood Alerts

Delhi Monsoon Command & Intelligence System (DCIMS)

▪ **Delhi Monsoon Command & Intelligence System (DCIMS)**

▪ **Government Schemes:**
NDMA, Smart Cities Mission
▪ AMRUT 2.0, Delhi Flood Control

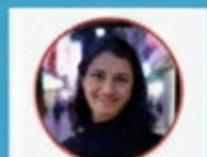
▪ **About the Innovators:**
Meet Team Dominators

ABOUT OUR INNOVATORS:



Swikriti Singh

Froste Side Developer



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Developer at Froste Side



Sonali Kumar Jha

Back End Developer

Featured Project:

Delhi Monsoon Command & Intelligence System (DCIMS)

Developed by Team Dominators

DCIMS

Delhi Monsoon

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FOREWORD: INDIA'S URBAN MONSOON CRISIS

Indian cities are increasingly vulnerable to extreme monsoon events due to climate change, rapid urbanization, and aging infrastructure.

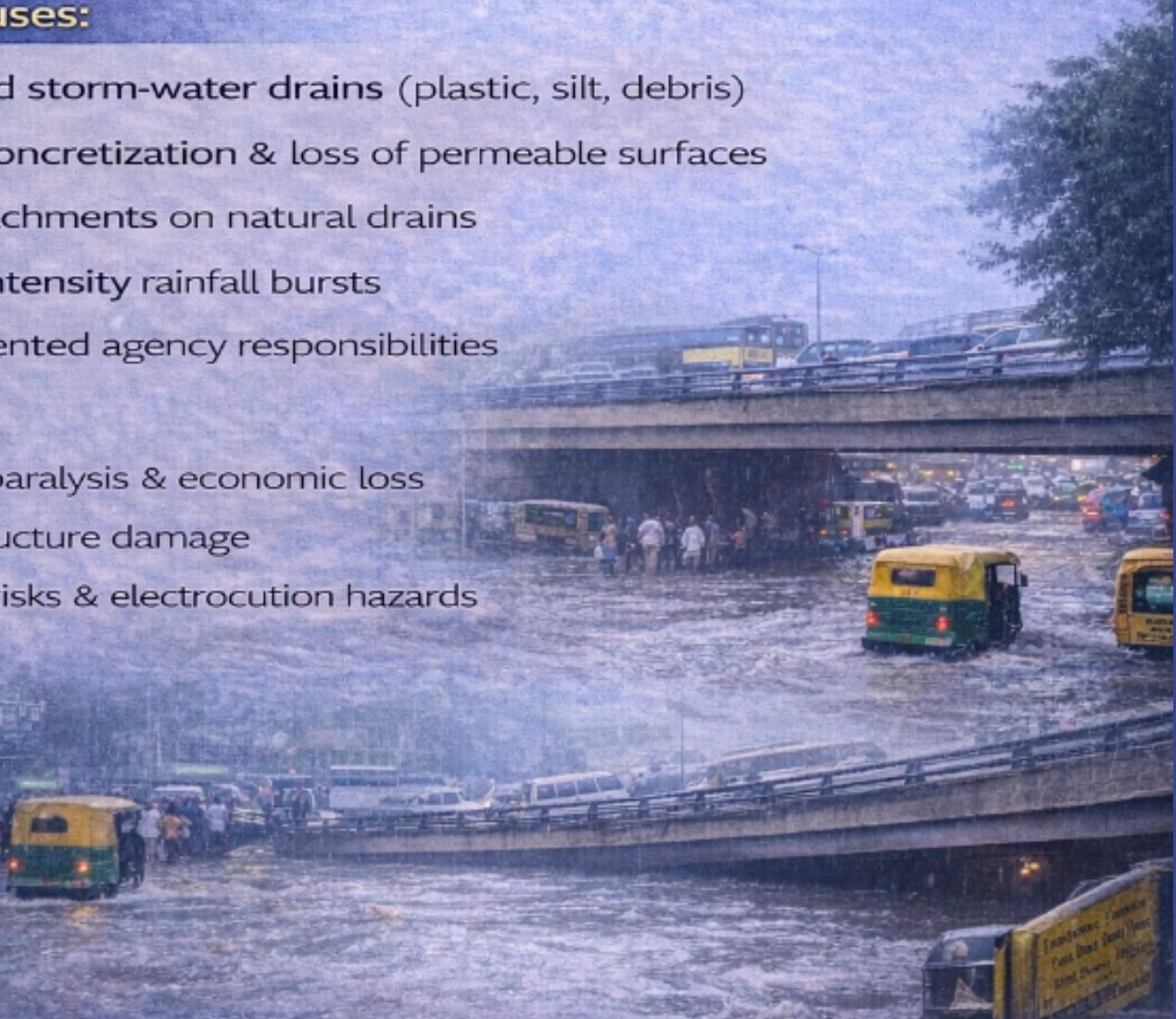
Water-logging is no longer a seasonal inconvenience—it is a governance, safety, and economic challenge.

Key Causes:

- Choked storm-water drains (plastic, silt, debris)
- High concretization & loss of permeable surfaces
- Encroachments on natural drains
- High-intensity rainfall bursts
- Fragmented agency responsibilities

Impact:

- Traffic paralysis & economic loss
- Infrastructure damage
- Health risks & electrocution hazards



Cities like Delhi experience severe localized flooding even during short rainfall events, exposing gaps in predictive planning and coordination.

This magazine presents **DCIMS**, a data-driven platform designed to transform monsoon governance through **early warning**, **preparedness assessment**, and **real-time intelligence**.

THE PROBLEM: WHY CITIES FLOOD

What is Water-Logging?

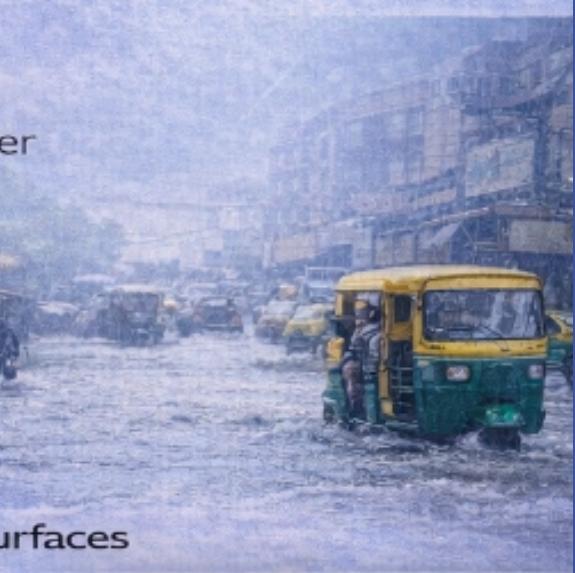
Water-logging occurs when rainfall exceeds the drainage system's capacity, causing water to stagnate on roads, underpasses, and residential areas.

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GOVERNMENT RESPONSE & GAPS

Current Government Measures:

- Annual Monsoon Action Plans
- Pre-monsoon desilting drives
- Emergency pumping deployment
- IMD rainfall alerts
- Smart City ICCCs

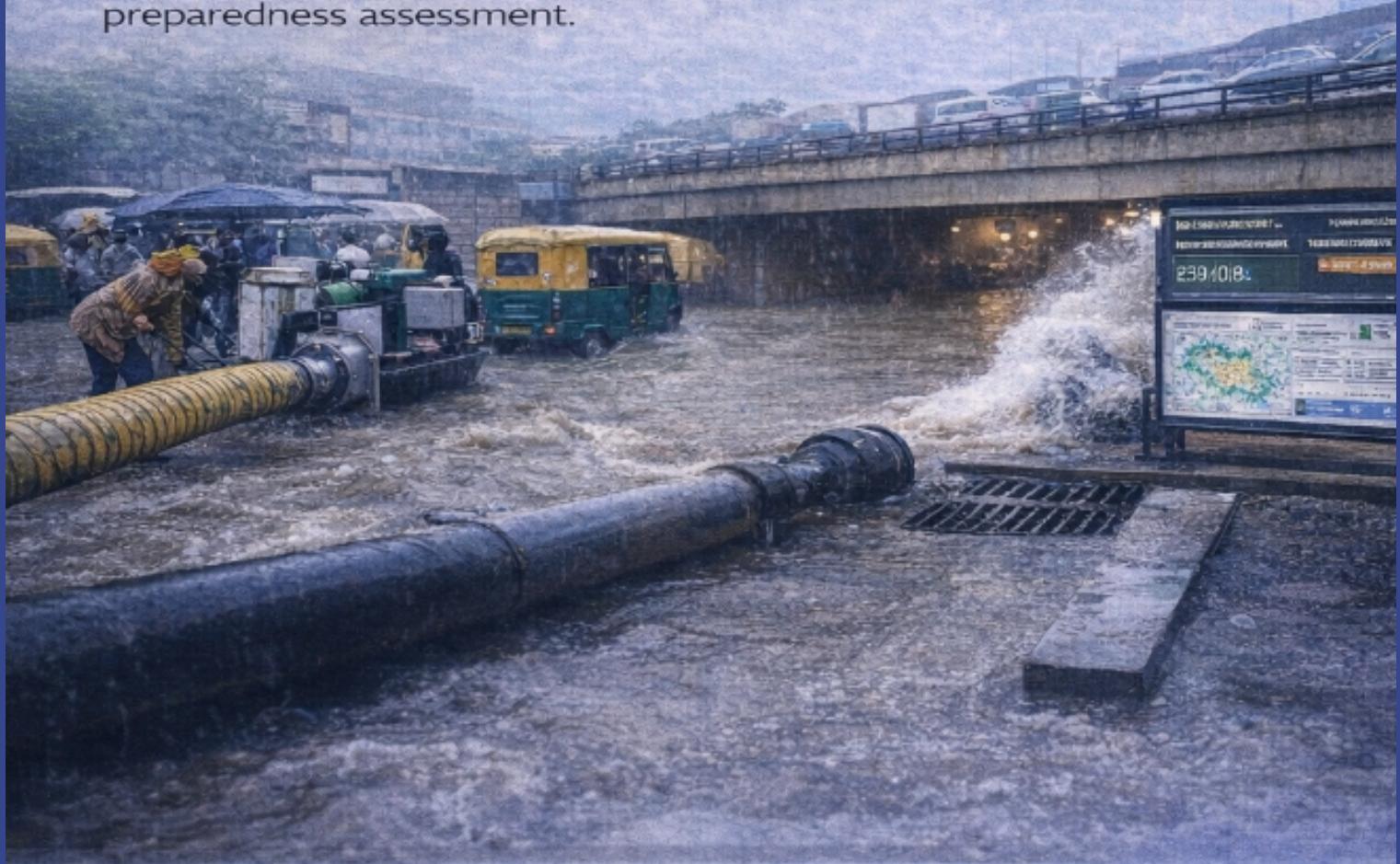


DCIMS acts as a digital command brain for urban flood resilience.



Critical Gap:

- **Most actions are reactive.** Decisions are made after flooding occurs, with limited predictive intelligence or ward-level preparedness assessment.



INTRODUCING DCIMS

Delhi Monsoon Command & Intelligence System (DCIMS) is an AI-driven, ward-level flood and drain failure prediction platform.

Core Objective:

- Enable **proactive**, data-backed monsoon governance by predicting:
 - Flood-prone wards
 - Drain choking risks
 - Preparedness levels before rainfall peaks

DCIMS acts as a **digital command brain** for urban flood resilience.



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HARDWARE: REAL-TIME SENSING LAYER

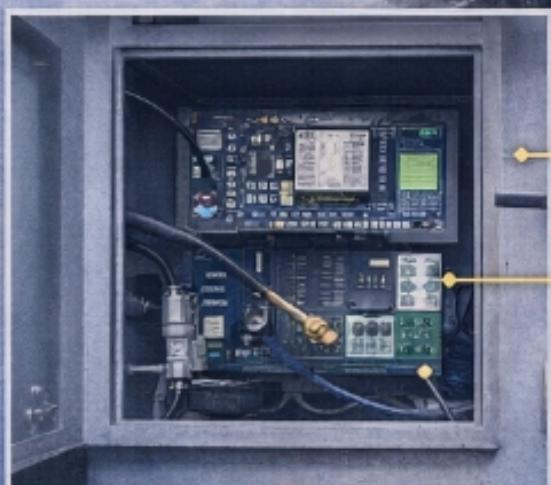
DCIMS deploys low-cost IoT sensor units in flood-prone wards.

Each Unit Includes:

- Rainfall Sensor – measures local precipitation intensity
- Ultrasonic Water-Level Sensor – monitors drain & road water depth
- Flow / Blockage Indicator – detects abnormal drain behavior
- ESP32 / NodeMCU – Data processing & control
- GSM / Wi-Fi Module – Real-time data transmission

Key Advantage:

Easy installation, scalable deployment, and affordable for municipal use.



- **ESP32 / NodeMCU**
Data processing & control
- **GSM / Wi-Fi Module**
Real-time data transmission



Easy installation, scalable deployment, and affordable for municipal use.

SOFTWARE, GIS & AI INTELLIGENCE

Live GIS Dashboard:

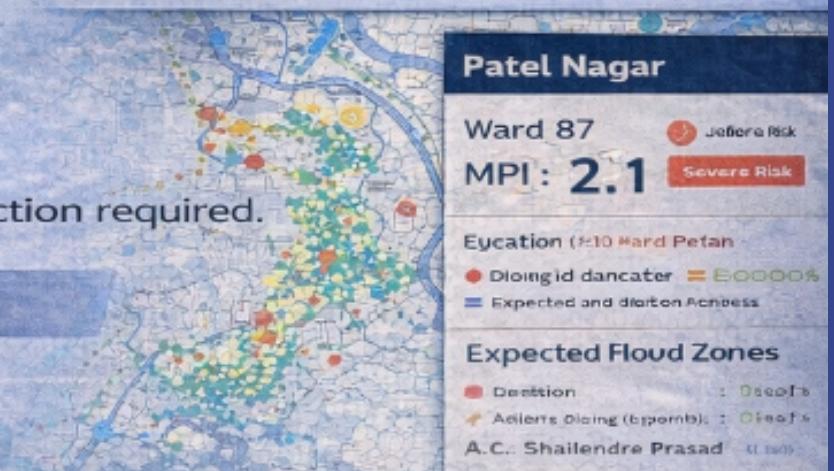
- Interactive map of Delhi
- Ward-level color coding:
 - High Risk
 - Moderate Risk
 - Low Risk



Monsoon Preparedness Index (MPI):

- Each ward is scored based on:
- Drain condition
- Historical flooding
- Urban density

Lower MPI = urgent preventive action required.



AI Drain Choking Prediction:

- Analyzes:
- Tree density
- Market activity
- Historical choking records
- Sensor anomalies



MINISTER-LEVEL DECISION DASHBOARD

Red Zone Board (Policy View):

- High-risk wards
- Critical drain alerts
- Responsible officers displayed
- Pump & desilting deployment recommendations



Why It Matters:

- Accountability-driven governance
- Faster decisions
- Optimized resource allocation

This dashboard is designed specifically for Municipal Commissioners, IAS officers, and Ministers.

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Developed by:
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CITIZEN PARTICIPATION & SIMULATION

Citizen Module:

- Geo-tagged water-logging reports
- Photo/video uploads
- Ground-truth validation of sensor data



Rainfall Simulation Engine:

- Authorities can simulate:
- Extreme rainfall (cloudburst scenarios)
- Drain stress & overflow
- Worst-case ward impacts



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Enables pre-emptive road closures, pump placement, and safety advisories

Developed by: Team Dominators

Inspired by Smart Cities Mission | NDMA | AMRUT 2.0



IMPACT, PILOT & CONCLUSION

Governance Impact:

- Predictive flood management
- Faster emergency response
- Data-driven planning
- Inter-departmental coordination

Pilot Readiness:

- Ward-level sensor deployment
- Live dashboard demo
- AI alerts & citizen reports



Conclusion:

DCIMS demonstrates a practical, scalable, and deployable solution for urban flood resilience—combining **technology, governance, and citizens** to build monsoon-ready Indian cities.

Pilot Readiness:

Ward-level sensor deployment

- Live dashboard **demo**
- AI alerts & citizen reports

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