

Report on Disaster-Prone Areas in Jharkhand: Pattern Analysis and Prevention Strategies

Abstract

This report presents a detailed study of disaster-prone areas in Jharkhand, India, using a dataset that includes historical disaster occurrences across the state. A pattern analysis was conducted to identify key reasons behind these vulnerabilities. Based on the findings, this report also suggests actionable measures for disaster risk reduction and management.

Introduction

Jharkhand, known for its rich mineral resources and dense forests, frequently experiences a variety of natural and human-induced disasters. These include floods, droughts, landslides, forest fires, and mining-related accidents. Understanding the spatial distribution and underlying causes of these disasters is crucial for mitigating risks and ensuring the safety and resilience of communities.

Dataset Overview

The dataset utilized for this analysis contained detailed information on:

- Locations affected by disasters (district, block, village-level data)
- Type of disaster (e.g., flood, drought, landslide, fire, industrial accidents)
- Frequency and intensity of disaster events over the past two decades
- Socio-economic and environmental factors associated with each area (such as rainfall, land use, mining activity, forest cover)

Pattern Analysis

Commonly Affected Areas

The analysis revealed several districts consistently impacted by disasters:

- **Flood-prone areas:** Sahibganj, Pakur, Dumka
- **Drought-prone areas:** Palamu, Garhwa, Chatra (due to erratic rainfall and deforestation)
- **Landslide-prone areas:** Hilly regions of Ranchi, Hazaribagh
- **Forest fires:** West Singhbhum, Latehar, Gumla (dense dry forests during summer)
- **Industrial/Mining Accidents:** Dhanbad, Bokaro, East Singhbhum (due to extensive mining operations)
- **Geographic Factors:** Areas near rivers and hilly terrains are more prone to floods and