

Flood Risk Assessment of Darbhanga District, Bihar

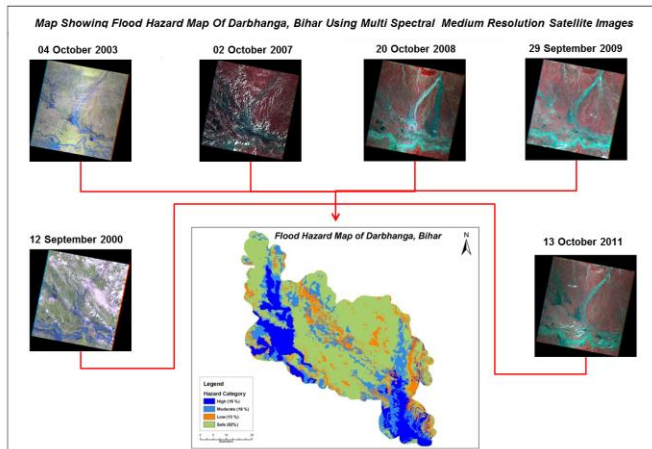


Figure 1. Map showing flood hazard map of study area.

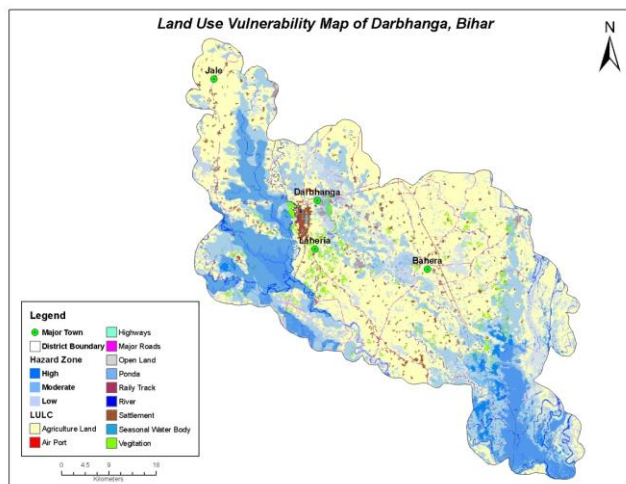


Figure 2. Map showing Land Use vulnerability map of study area.

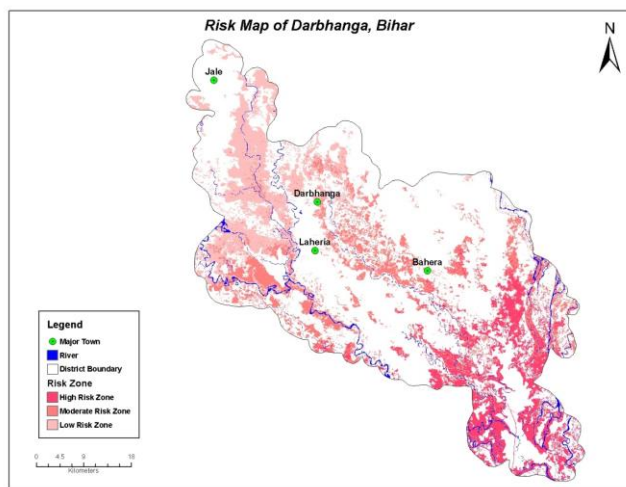


Figure 3. Map showing flood risk map of study area.

Business Need:

Darbhanga is spread over an area of about 2279 sq. km. The district has a vast alluvial plain devoid of any hills. There is a gentle slope from north to south with a depression in the Centre. The district has four major river systems, the **Baghmata**, the **Chhoti Baghmata**, the **Kamla** and the **Tiljuga**. This region gets flooded almost every year.

The Business need was to assess the vulnerability and risk due to flooding in Darbhanga district, Bihar.

Area Covered:

The area covered for this study was entire district of Darbhanga, Bihar.

Inputs Used:

- Multi-temporal, multi-spectral Medium Resolution Satellite Images co-incident with flood situation in the study area was used for the study.
- Latest multi-spectral satellite image of dry season was used for the creation of LU/LC map.
- Cartosat-1 stereo-pair was used for the creation of
 - Digital Terrain Model
 - Infrastructure Map
 - Drainage Network
- Village Boundary Map
- Census Data
 - Population detail

Business Solution:

Latest satellite images were used to create the existing LU/LC and Infrastructure map. Analysis of multi-temporal satellite images was done to know and map the extent and frequency of flood to create the 'Flood Hazard Map.'

Overlay analysis of existing LU/LC and Infrastructure was done with reference to Flood Hazard Map in GIS environment to create the 'Flood Vulnerability Map'.

Finally vulnerable areas were analyzed against the depth of water, using precise DTM to create 'Flood Risk Map.'

Project Shipment:

The following shipments were made-

- i) Layout showing Flood Hazard Map, Flood Vulnerability Map, Flood Risk Map of the study area at 1:50,000 scale