

Sponsored Thesis Project Competition on "Re-imagining Urban Rivers"

ENHANCING RESILIENCE & IMAGEABILITY OF URBAN AREAS THROUGH THEIR LAKE AND RIVER ASSETS- A CASE OF NAGPUR

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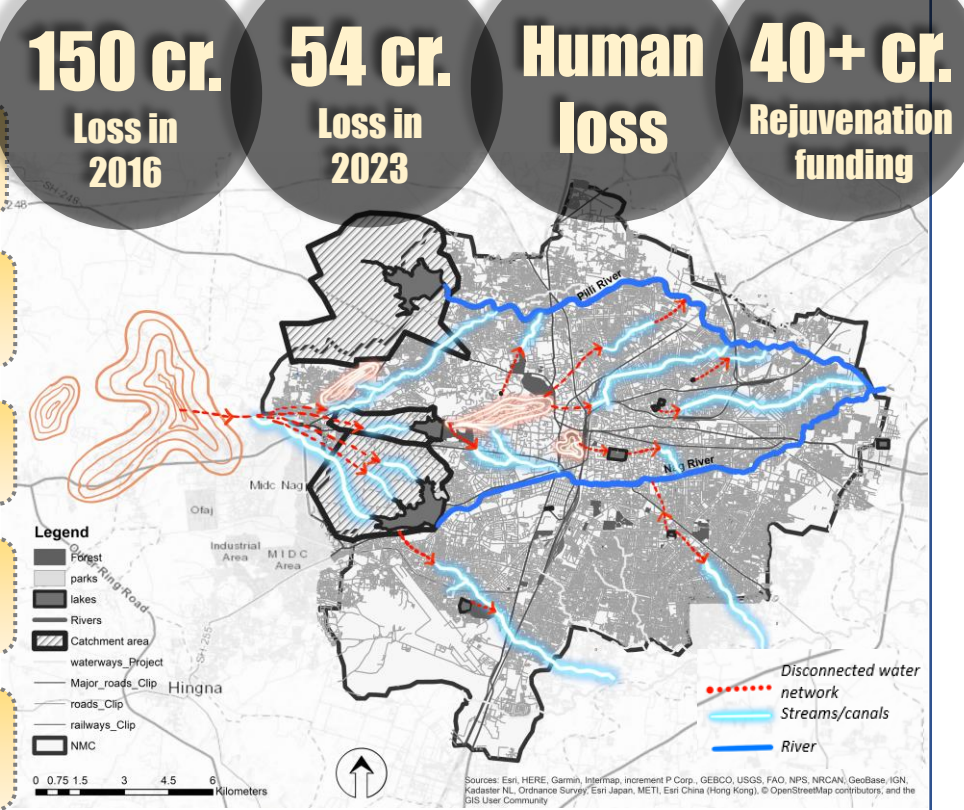
NAGPUR, MAHARASHTRA



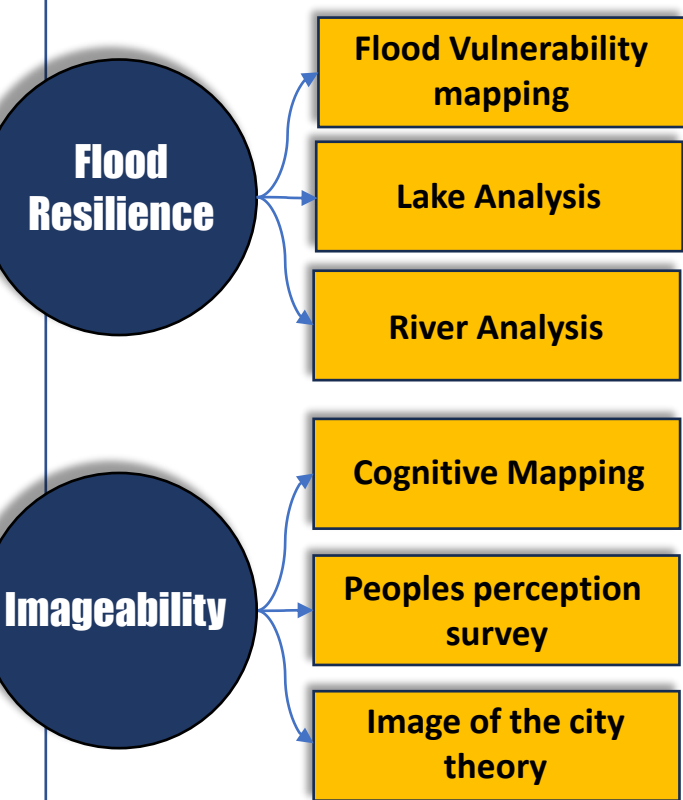
02 Rivers
11 Water bodies

Conceptualization

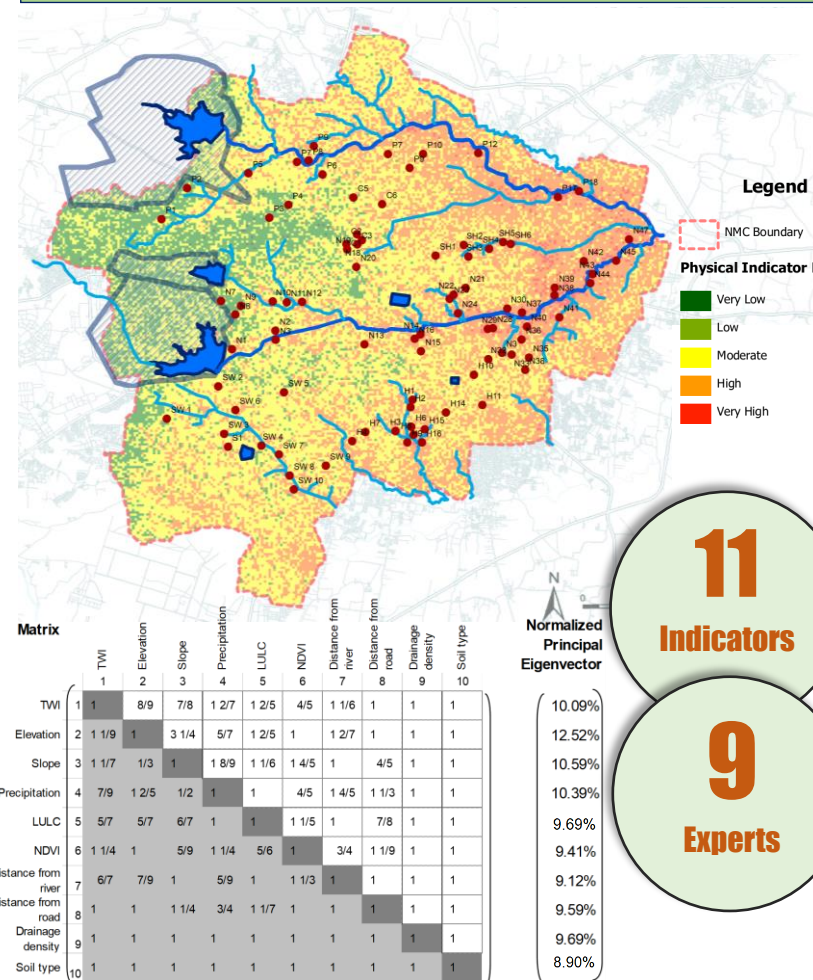
- STEP 1** Literature study- History, Significance and the profile of water assets in the city.
- STEP 2** Flood Vulnerability mapping using Multi-criteria decision making method- AHP
- STEP 3** To identify the major reasons for flooding in Nagpur.
- STEP 4** Assessing the Potential & contribution of water bodies to the Image of the city.
- STEP 5** Formulation of holistic strategies & proposals encompassing resilience and imageability for Nagpur city



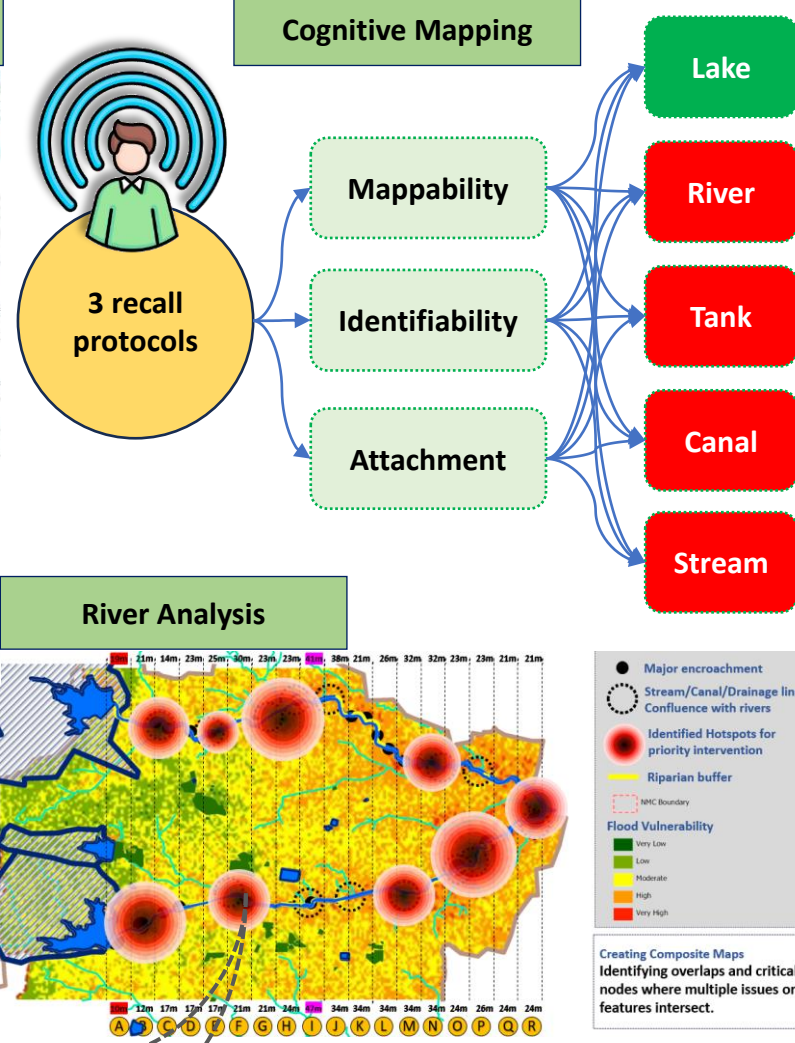
Analysis



Flood Vulnerability mapping for Nagpur using AHP & GIS



11 Indicators
9 Experts



10 parameters on lake and its relation with floods are scored on Likert scale. 5 elements and 3 components of Kevin Lynch's theory of Image of the city are scored on Likert scale to measure the potential of water bodies and identify the gap

Infographic	Lake/tank/pond	Resilience Score	Imageability Score
	Gorewada	4	3.75
	Ambazari	3.27	4.75
	Futala	3.09	4.5
	Police talao	2.91	2.75
	Sonegao	2.36	3.25
	Sakkardara	1.45	3.25
	Gandhisagar	1.45	4.5
	Pandrabodi	1.27	2
	Lendi & Naik	1.09	2
	Magalwari	1.09	1.75

Proposals

Proposal 1- Priority Function Classification of Lakes										
Lake/Tank	Flood prevention	Cultural Recreational	Modern recreation	Economy generation	Unique identity	Catchment restoration	River flow management	Water supply	Ecosystem support	Convert to retention ponds (Increase water holding capacity)
Gorewada lake	✓			✓	✓	✓	✓	✓	✓	8.82
Ambazari lake	✓		✓	✓	✓	✓	✓	✓	✓	7.54
Futala lake			✓	✓	✓	✓	✓	✓	✓	1.7
Gandhisagar tank	✓	✓		✓	✓	✓	✓	✓	✓	0.6
Sonegao tank	✓		✓	✓	✓	✓	✓	✓	✓	0.4
Lendi & Naik tank	✓		✓	✓	✓	✓	✓	✓	✓	0.15
Sakkardara tank		✓		✓	✓	✓	✓	✓	✓	0.07
Pandrabodi pond	✓					✓	✓	✓	✓	0.03
Police tank	✓			✓	✓	✓	✓	✓	✓	0.013
Magalwari pond	✓	✓		✓	✓	✓	✓	✓	✓	0.008

Proposal 4- Urban water network- Canal Revitalization



Proposal 2- Identification of Hotspots in Downstream

Inspection Report → Suitable Intervention

Bioswales
Permeable pavements
Land Acquisition
Abutment walls – Reconstruct/ Retrofit / Revitalize

Cleaning, desilting and deepening
Detention basins
Removing encroachment
No development zone

Proposal 3- Recommendations for upstream lake & its surroundings

Urban catchment forestry, Contour Building, Garden/water sports, Floodable parks/Retention ponds, Ambazari dam strengthening, Floating wetlands, Forebay pond.

Water connect app development

Public Reporting and Feedback, Interactive Map, Alert and Notification System, Educational Resources, Community Engagement, Data Analytics and Reporting.

Co-benefits

- Flood resilience
- Imageability
- Climate change
- Green space & Biodiversity
- Waste water
- Water pollution
- Public infrastructure
- Economy generation
- Social benefits
- Community awareness
- Water utilization
- Modern Recreation
- Cultural Recreation
- Unique identity
- Urban heat

Despite the losses from urbanization and neglect, the city can still breathe and escape suffocation if its waters are managed and respected.