

### Vulnerability and Wastewater: A Social Analysis of Megacity Delhi (India)

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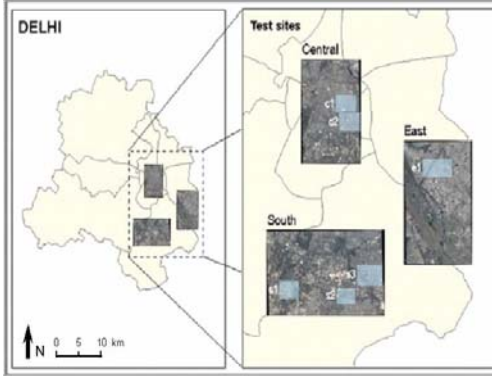
#### 1. Introduction

- Presently inhabited by 15.3 million people, Delhi is affected by a high degree of fragmentation between urban upper class quarters and squatter settlements.
- Practically half of the population live in informal settlements with no proper arrangements for water supply, sanitation and wastewater disposal facilities.
- The city generates 3276 mld of wastewater, of which only 1446 mld receives actual treatment utilising about 63% of total treatment capacity.

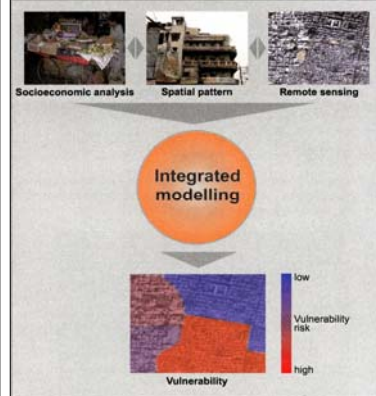
#### 2. Aim and Objectives

- This study aims at analysing wastewater risks and vulnerability of different social groups due to changes in the physical, socio-economical, infrastructural and institutional environments of the city. Achieving the below mentioned objectives would make important contribution towards fulfillment of the major goal of main project.
- Understanding the nature of wastewater problem and the factors contributing to it.
  - Identification and analysis of types and degree of vulnerability with respect to sanitation and sewerage component of the city.
  - Understanding various means of exposure and health risks.
  - Understanding people's perception towards the problem.
  - Identifying various measures adopted by the community.
  - Identifying gaps in community and institutional responses.

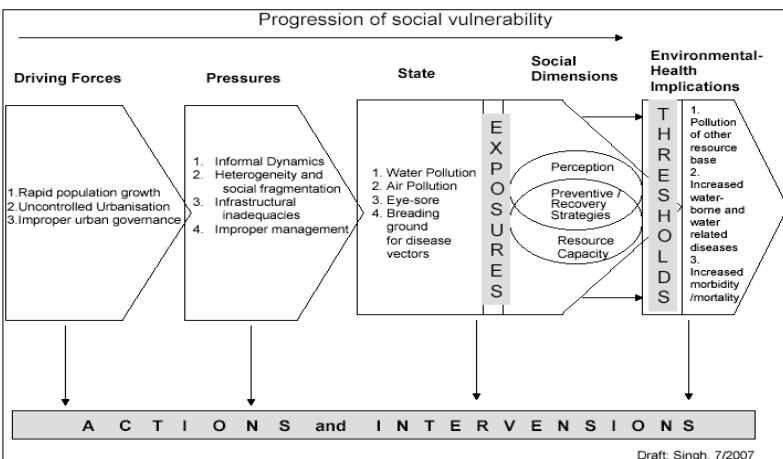
#### 3. Study Area and Methodology



This study is embedded into a bigger project aiming at finding an integrated approach to analyse vulnerability related to urban water system using remote sensing and quantitative/qualitative social science research methods. Common test sites were selected from central, east and south locations of Delhi for elaborate image processing and comprehensive household survey. Total of 696 households from different types of formal and informal residential quarters were surveyed. Possible inter-linkages are sought for integrated modelling.



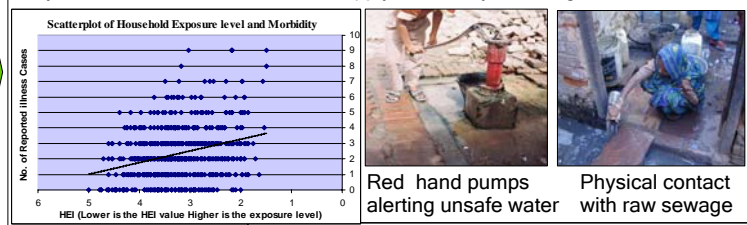
#### 4. Conceptual Framework



#### 5. Observation and Analysis



Sewage from unlined tanks, open drains and leaking pipes enter the water system and contaminates water supply ultimately reaching the endusers



#### 6. Conclusions

The study reiterates that level of risk and exposure is higher in the informal settlements. Resource capability, people's perception and awareness plays important role in determining household vulnerability. Efficient urban governance, favourable policies towards effective planning implementations and a conducive socio-economic setting for community participation and citizen's awareness at local level is important to deal with the 'informal challenge'.

