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Wastewater Problems and Management in Delhi

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Wastewater Problems and Management in Delhi



*Reena Singh
New Delhi, India*



Presentation outline

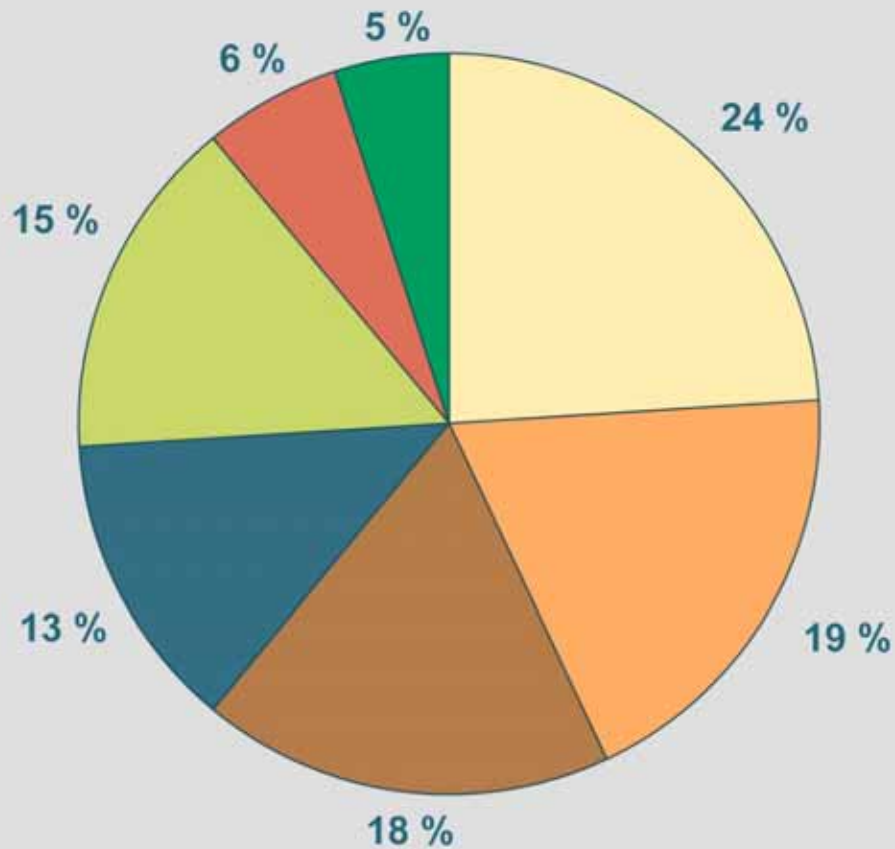
1. Urbanisation and Sewerage Issues in Delhi
2. Status of Wastewater Generation and Treatment
3. Wastewater-related Risks
 - 3a. Environmental and Public Health Risks
 - 3b. Economic Risks
4. Responses at Institutional and Community Level
5. Hindrances to Effective Wastewater Management
6. Concluding Remarks



1. Urbanisation and sewerage issues in Delhi

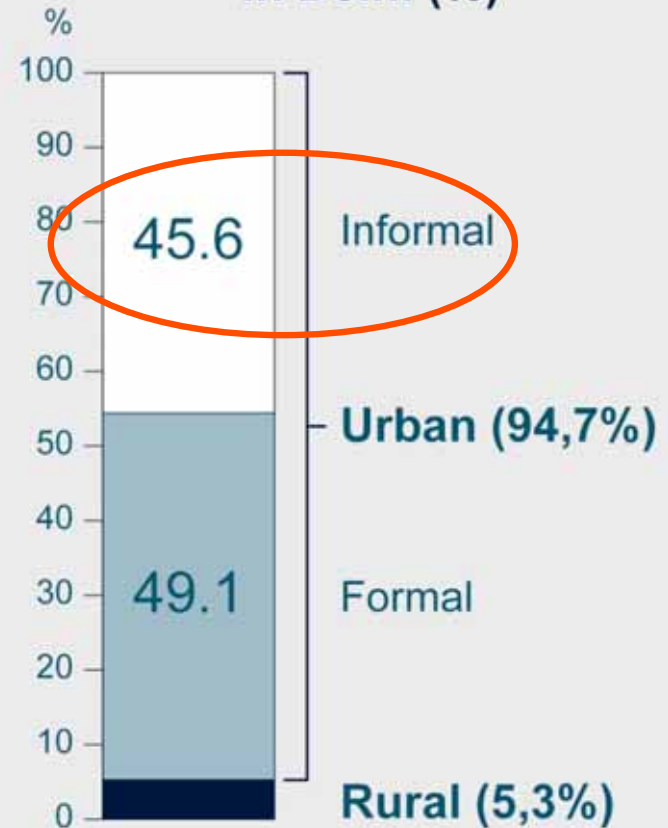
1. Capital City - Rapid Urbanisation – 15.3 mill. People – **Informal** settlement.
2. Water supply augmentation do not commensurate sewerage improvement.
3. Diverse and unsegregated sources of wastewater
4. Problem of monsoon flooding: June – September
5. Sewage contamination – high incidence of water-related diseases-
environmental and health risks.

Settlement Type and Status in Delhi



Source: DUEIIP-2021

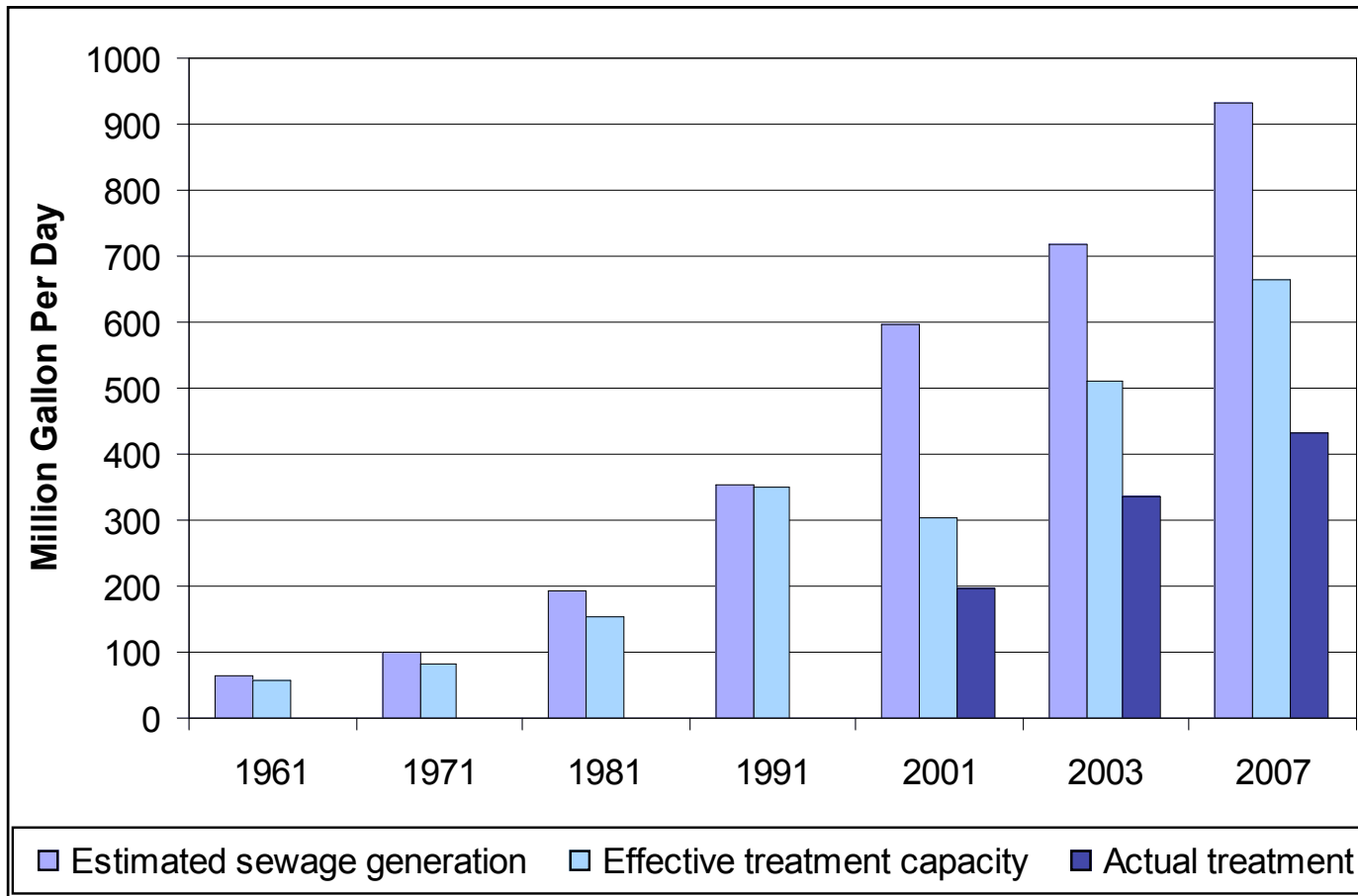
Distribution of Total Population in Delhi (%)



1. Urbanisation and sewerage issues in Delhi

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2. Status of Wastewater Generation and Treatment



- Wastewater generation is 931 MGD (Million Gallon Per Day).
- Infrastructural up-gradation has not kept pace with growing population-overburdened sewerage network (covering only 53%).
- Inadequate treatment capacity (665 MGD) actual treatment (432 MGD).

3a. Environmental and Public Health Risks



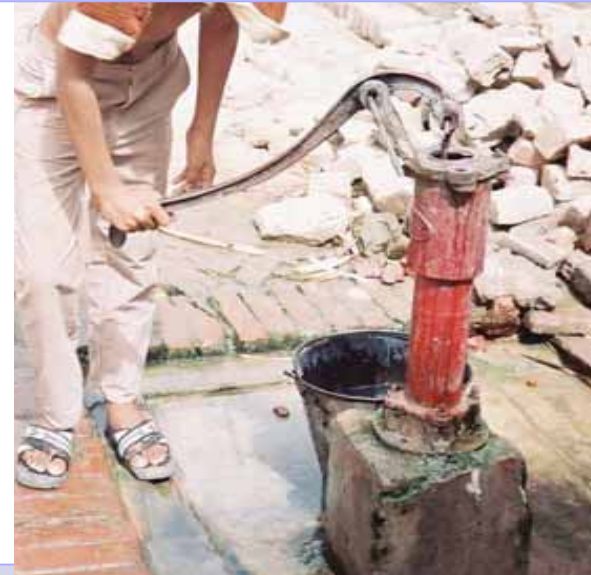
Cess pools forming conducive breeding Ground for disease carrying vectors



Unlined open drains – source for groundwater pollution

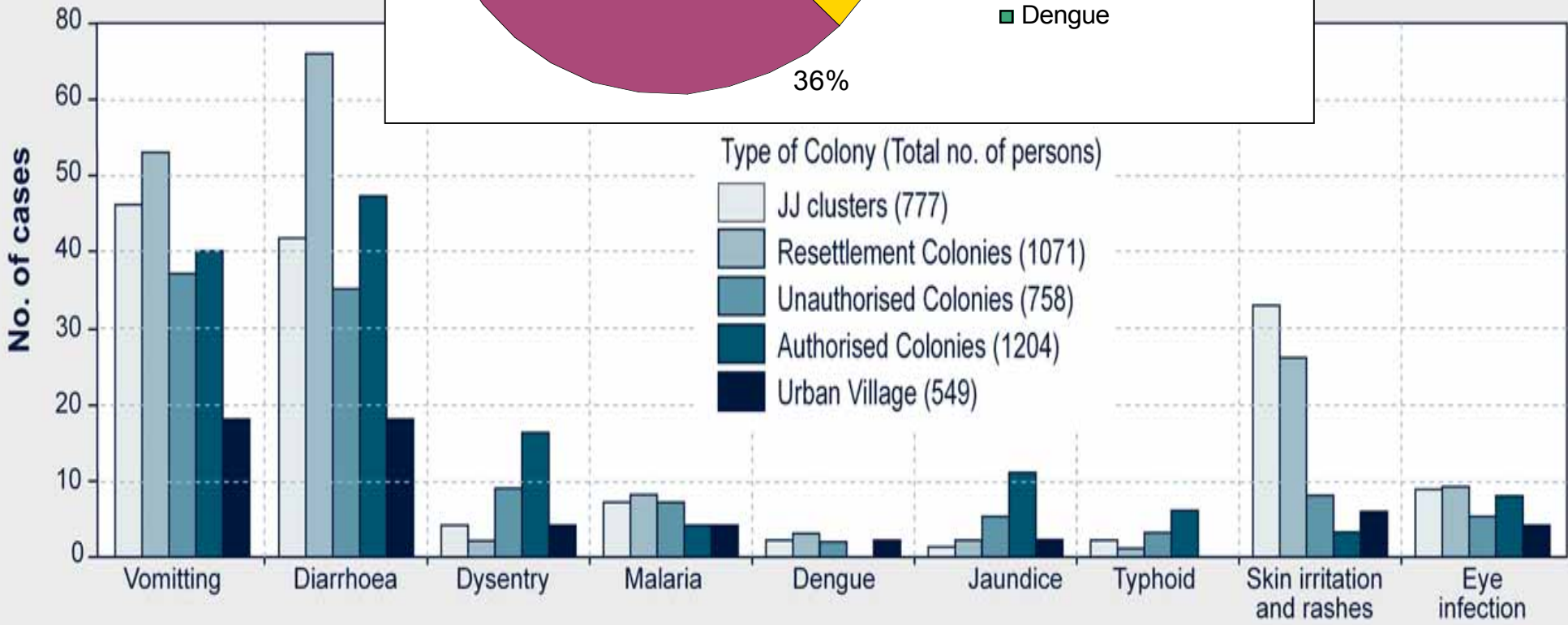
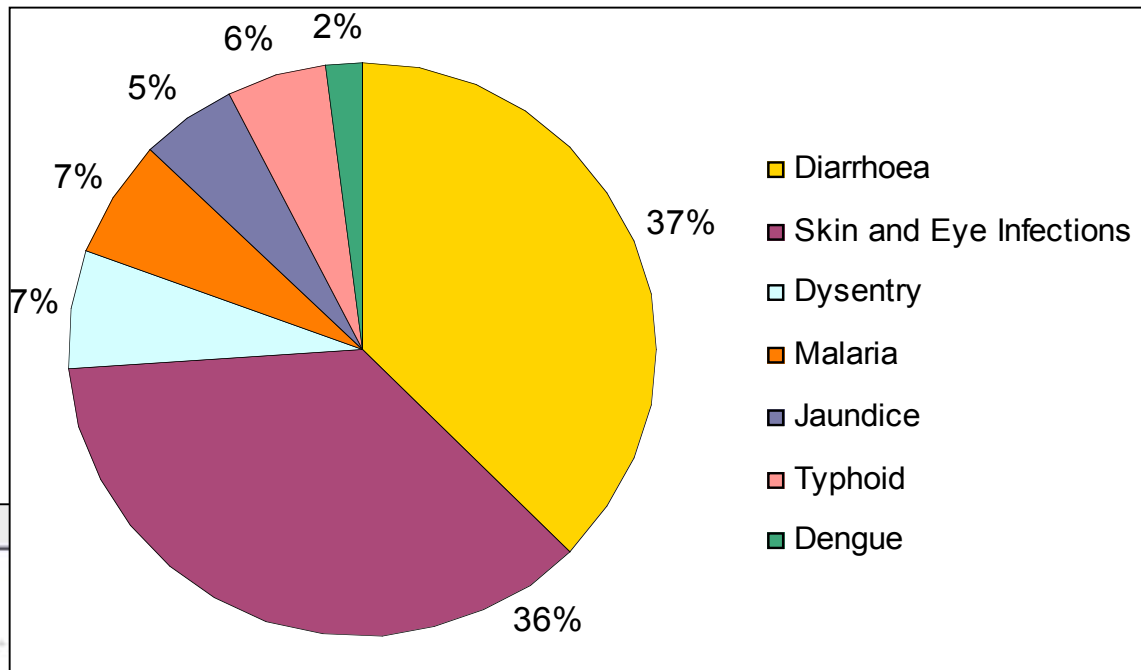


Direct Physical Exposure to wastewater



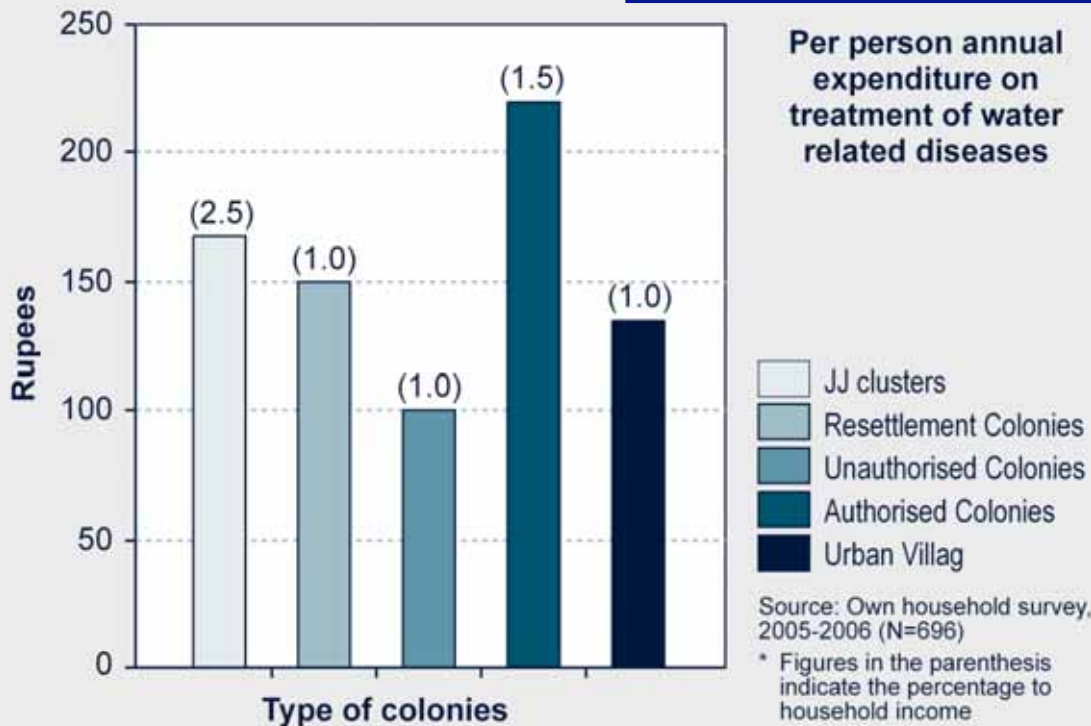
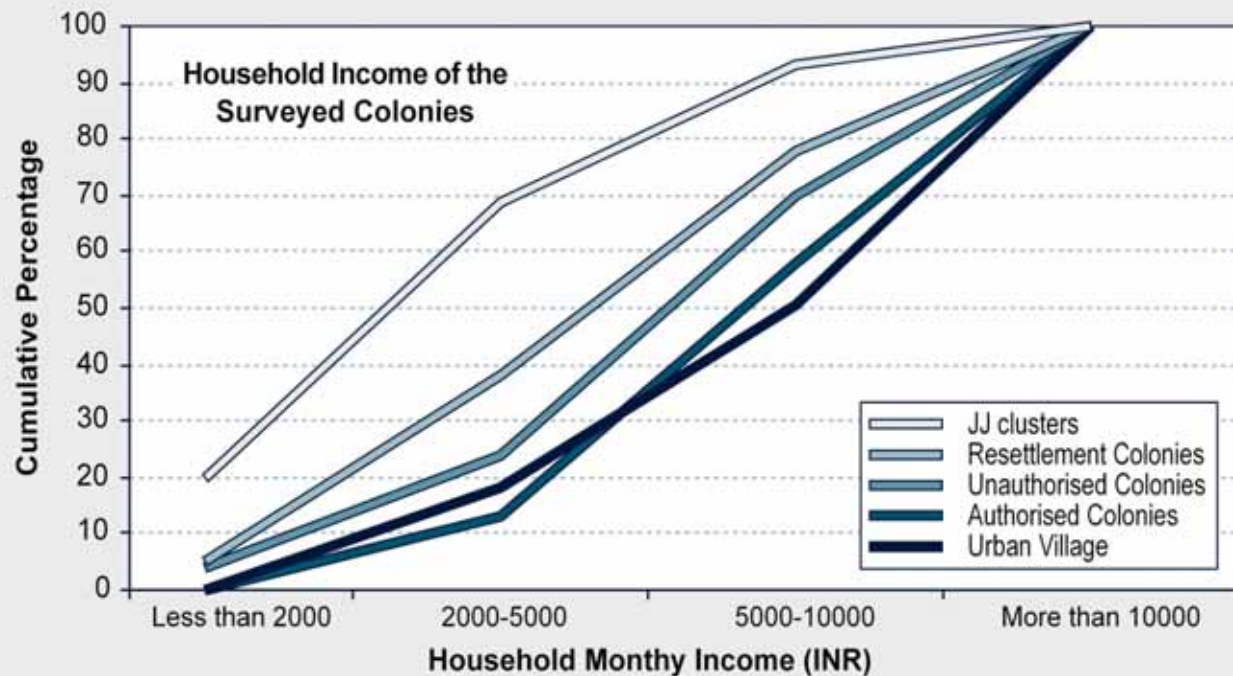
Red hand pump indicating unsafe water

Burden of water-borne and water-related disease



Source: Own household survey. 2006-2007

3b. Economic Risks



Source: Own household survey, 2005-2006

4. Responses at Community and Institutional Level

- Various types of preventive, adaptive and coping measures were adopted at community and household level.
- Delhi Water Board (DJB) is responsible for providing water and sanitation services - 8 zones directly under each zonal engineers.
- Structural solutions - extension of sewerage networks and building new treatment plants.
- Involvement of local contractors to operate services – new forms of service delivery.
- Emergence of new actors – private sector participation

5. Hindrances to Effective Wastewater Management

	City Level	Neighbourhood Level	Household Level
Physical/Planning	<ul style="list-style-type: none"> • Hyper-urbanisation, Increasing informality & Planning failures. • Lack of monitoring tools and information system. 		
Socio-cultural	<ul style="list-style-type: none"> • Fragmented and unclear institutional responsibilities. 		
Economic	<ul style="list-style-type: none"> • Multiple authorities in-charge. • Weak financial base. 		
Behavioural	<ul style="list-style-type: none"> • Institutional corruption. • Lack of accountability. 		
Legal			
Political	<ul style="list-style-type: none"> • No coordinating body. • Lack of sustained political will.,,, 		

6. Concluding Remarks

- Find a **sustainable solution** to wastewater problems.
- Sewerage management – still needs to **gain importance**.
- Motivation to and Removal of constraints to **self-help**.
- **Area specific planning** - need of huge in-migrant (illegal) population.
- Adoption of **organised** local strategies for common problems.
- Inter and Intra level **communication**.
- Development of good **monitoring tool and information system**.
- Sustained **political will**.



Thank You...