



# Environmental management plans for the communities of Lucknow

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**In Lucknow, India, urban slums have sprung up much faster than the authorities' capacity to service them. Here, the three-way partnership of government, community-based NGOs and the private sector is the key to planning adequate urban drainage.**

**L**ike many cities in India, Lucknow has grown without any systematic design, planning or organic links with its rural hinterlands. The phenomenal growth of slums has mainly been concentrated along the network of natural drains (*nalas*) in the city, where the urban poor live – in most cases without adequate basic services.

Lucknow's infrastructure is currently over-burdened. The city produces about 1500 tonnes per day (tpd) of rubbish, but the authorities can only manage to collect and dispose of 1050 tpd (LNN, 1996). The rest lies in heaps that are a nuisance, and this solid waste eventually reaches the River Gomti directly or indirectly through the natural drains. The total wastewater generated from the city is finally discharged as untreated sewage into the River Gomti through a network of *nalas* and outfalls. The dry-weather flows in the river are so meagre in comparison to their pollution loads that the river resembles an open sewer. The river is also polluted downstream with domestic and industrial effluents. During the monsoon the quality of life of local people is at its worst.

## A local environmental management plan

The objective of the study described here was to formulate a community-based environmental management plan (EMP) for this critically stressed natural drainage catchment, so as to improve the quality of life of the urban poor.

The minimum basic spatial unit for grassroot level planning and implementation of the EMP has been taken as a 'drainage catchment'. Critically stressed catchments were identified through:

- discussion with stakeholders (NGOs, and the municipal bodies, LNN, UPJN, LJS) to identify the most degraded *nalas*, and

- secondary information from municipal and pollution-control agencies on the quantity and quality of wastewater discharged.

The Sarkata, Wazirgunj and Pata *nalas* were all found to be critical, but the Wazirgunj *nala* and its catchment were selected for analysis and the development of an EMP. This included a transect study and PRA (participatory rapid appraisal) at different locations within the catchment.

### Transect study

A transect study of the Wazirgunj *nala* was done to obtain an overview of the physical environment and its degradation. The Wazirgunj *nala* study, shown in Figure 1, provided the following information:

- the nature of settlements and the built-up environment along the *nala* banks
- a hierarchy of open spaces along the entire *nala* stretch and the community's response to these open spaces
- communities' waste disposal behaviour and the resulting impact on the *nala* environment
- a profile of the type of activities conducted on the banks of *nala*.

### Participatory Rapid Appraisal

PRA exercises were carried out to get some primary information about the level of existing infrastructural services. They were also done to make the community prioritize their problems, which are very situation specific, so that these concerns could be incorporated in any improvement actions undertaken. The PRA exercise was also an attempt to draw out indigenous solutions from the community itself.

### Institutional involvement

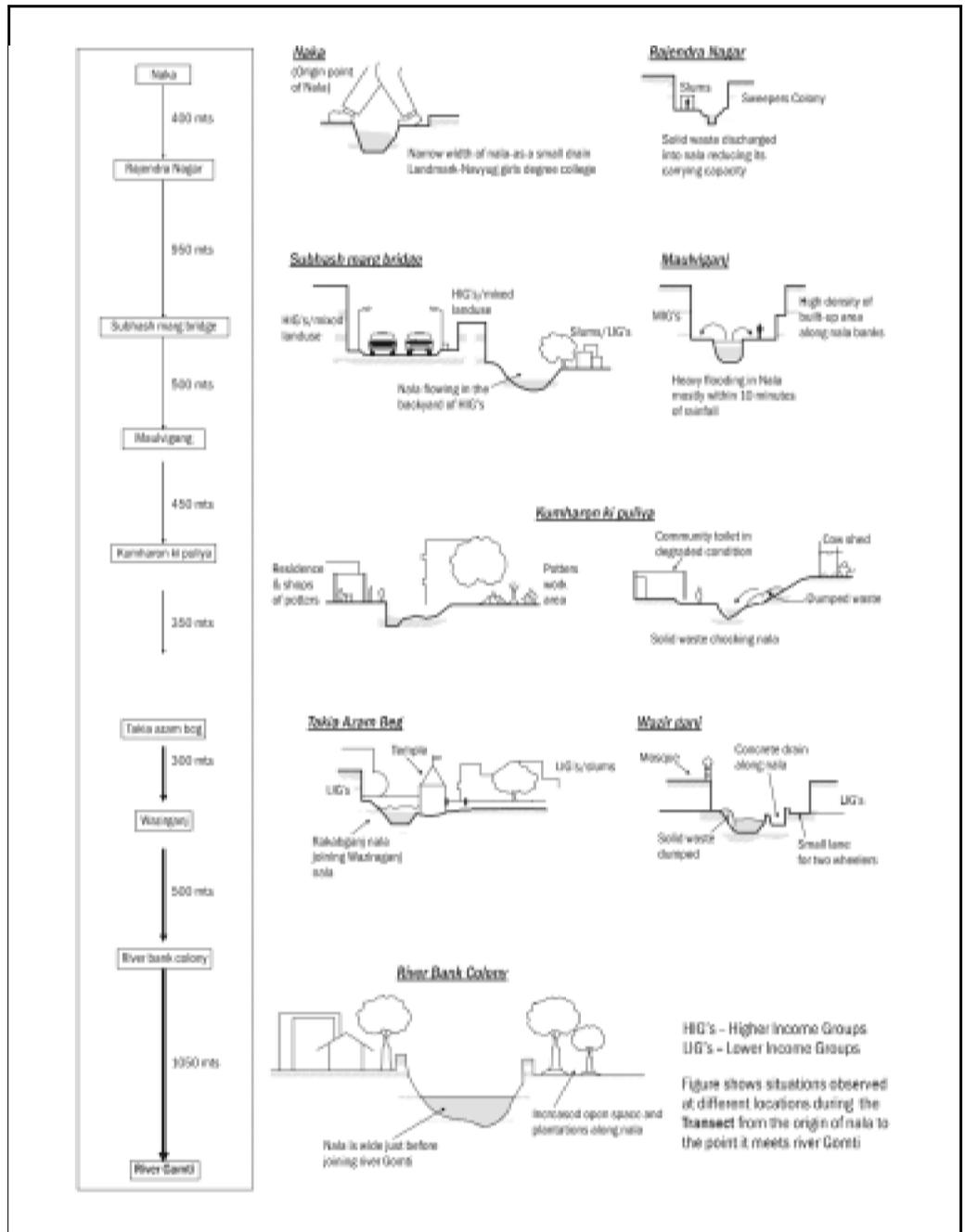
Community participation is the key factor in the successful implementation of the

#### Lucknow City

Lucknow is the state capital of Uttar Pradesh (UP), India and has a population of about 2.6 million. A number of municipal bodies deal with water supply and sanitation: Lucknow Nagar Nigam (LNN) – solid waste; UP Jal Sansthan (LJS) – water supply; and UP Jal Nigam (UPJN) – wastewater management.

The River Gomti, a significant tributary of the Ganga, is the only perennial source of water for Lucknow. The high coliform counts indicate that pollution is at a maximum where untreated sewage is discharged through a number of point sources (natural drain outfalls). The city contributes biological oxygen demand and suspended solids of 44.4 and 88.6 tonnes per day respectively.<sup>1</sup>

Figure 1  
A visual transect through  
Wazirganj *nala*



proposed plan. Community-based management goes one step further: it empowers the community to control its systems. It is also important to develop strong tripartite links between the local elected councillors, communities, NGOs and the private sector.

The municipal/civic agencies, such as the LNN, LJS and UPJN, should monitor the implementation of the required infrastructure and should finance the required capital investment along with the private sector, together with a partial contribution from the community. NGOs play an important role as interlocutors between the communities and the local bodies, but this requires better internal communication between all government agencies.

It is very important to involve the councillors, who are the locally elected representatives, as they can strengthen the institution-building component of the entire management plan which is essential for implementation at the grassroots level.

Greater involvement of community groups in supervising the building needs to be encouraged. The community can play a particularly important role in solid-waste management, the construction of toilets and especially in improvement programmes for the *nala* banks.

### Similar initiatives

There are a number of examples of similar plans that have been successfully carried



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Rubbish that blocks the natural drainage system then causes flooding during the monsoon

out. The Integrated Sanitation Project sponsored by UNICEF, and implemented at Midnapore District in West Bengal, demonstrates the role of NGOs in mobilizing communities and intermediating finance for their own sanitation services.<sup>2</sup>

A project executed by Indore Development Authority and financed by DFID UK, has demonstrated the 'slum networking' concept successfully. Integrated upgrading has been carried out for the entire city of Indore using the slums and the natural drainage pathways as an urban net and not as isolated islands.<sup>3</sup>

Finally, the Hyderabad Slum Improvement Project has adopted a comprehensive community development approach for slums in the city. The thrust lies in providing physical infrastructure for services. The involvement of the people in planning, implementation and management through neighbourhood committees has been the key element in this approach.<sup>4</sup>

## Conclusions

The EMP has the potential to be adapted and used to upgrade all the drainage catchments in Lucknow, can be used in other cities as well. Its implementation will depend on several factors, such as the extent of the natural drainage network compared to the artificial drainage system, the profile of the *nalas*, the willingness of all the stakeholders to participate, and the financial viability of the project. Finance for such initiatives should come from the local government with support from external donor agencies and the private sector.

Communities should contribute towards operation and maintenance costs. Managing urban services in a decentralized manner should ensure environmental improvements in cities, thereby renewing the quality of life especially of the most vulnerable group – the urban poor.

## References

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- 3 AIT (1999) 'Slum networking a holistic approach for improvement of urban infrastructure and environment', [www.hsd.ait.ac.th/bestprac/abi.htm](http://www.hsd.ait.ac.th/bestprac/abi.htm) (updated, March 1999).
- 4 HSIP (1999) 'Integrated approach to slum improvement through community participation – the Hyderabad experience', [www.hsd.ait.ac.th/best-prac/hydr1.htm](http://www.hsd.ait.ac.th/best-prac/hydr1.htm).

## The Wazirganj plan

The proposed integrated EMP makes recommendations for three critical areas of concern: unhygienic sanitary conditions, inadequacies in solid waste disposal and physical degradation along the *nalas*. These have been highlighted below:

### Improvements in sanitation

- Individual household latrines should be provided wherever space and cost permit. Where this is not feasible, shared/community latrines should be provided for small user groups.
- Sewer connections to be provided to all the households.
- Elimination of all open drainage channels currently used as sewers.
- NGOs to raise awareness of cleanliness, hygiene and sanitation.

### Solid waste management

- Introduction of house-to-house collection system.
- Segregation of solid waste into organic and inorganic waste at source.
- Training and awareness programmes for community on importance of segregation and waste minimization through reuse and recycling.
- Promote recycling through formalized rag-pickers network.

### Physical improvement

- Desiltation of *nala* to achieve a regular stormwater flow and increase the capacity of drains, thus reducing the problem of monsoon flooding of the *nala* that facilitates vector breeding in the surrounding residential area.
- Development of open spaces along the *nala* as live community areas to facilitate a variety of socio-cultural activities.
- Planting a community green belt would beautify the environment as well as prevent further erosion of the *nala* bank.

The tangible results of such plans should lead to the metamorphosis of a degraded, unstructured and environmentally poor area into a rich and healthy environment, which will support and enhance the involvement of the community for all type of activities and ensure beneficial use of open spaces along the *nala*.