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.

Like 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 grassroots 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
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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**Figure 1**

A visual transect through Wazirganj nala

![Image of Wazirganj nala transect](image-url)
environmental management plans

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 nala. 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.

**The Wazirganj plan**

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

**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 nala, 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**