Indicators for urban environmental services in Lucknow – process and methods

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SUMMARY: *This paper describes how community indicators were used in Lucknow to support a dialogue between representatives from communities lacking basic services and service providers. This led to agreement on the indicators needed to benchmark existing environmental conditions, monitor and evaluate the quality of urban services and set priorities for environmental improvements. The paper describes how four neighbourhoods were chosen to develop an initial indicator set, how the local organizations were approached and the scope of the primary research – including community meetings and interviews with households and with officials from service providers. It then describes how this draft indicator set was presented at a workshop that brought together service providers and community representatives and how they agreed on an indicator set. The paper ends with an analysis of what the collection of data for this indicator set showed and a discussion of lessons for future work in this area.*
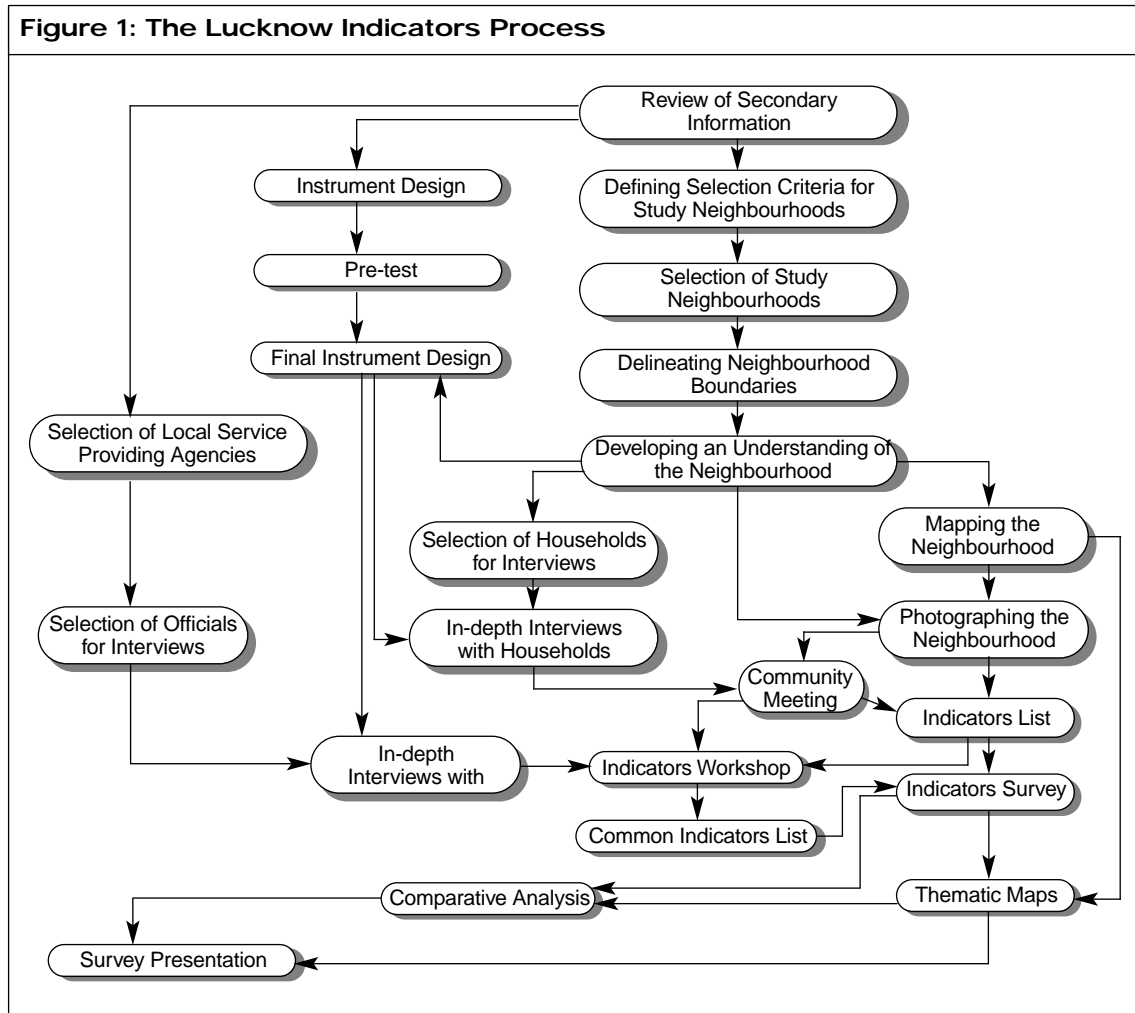
I. INTRODUCTION

GROWING CONCERN ABOUT environmental conditions in urban areas of Africa, Asia and Latin America has prompted the use of environmental indicators to set priorities for urban environmental improvement. Although significant progress has been made in this direction, few efforts have explored local participation in developing indicators which can be used for the design, implementation and monitoring of interventions. The DFID funded Sustainable Use of Environmental Indicators project was undertaken to bridge this gap and to test the potential for using environmental indicators in participatory assessment of neighbourhood conditions, in enabling dialogue, in creating space for negotiation, in improving understanding between service providers and communities, and in monitoring and evaluating the quality of urban services delivered in Cape Town, South Africa and Lucknow and Calcutta, India.[1] This paper documents the process and methods employed for this purpose in Lucknow.

II. REVIEW OF SECONDARY INFORMATION

THE PROCESS ENVISAGES using indicators for initiating dialogue between residents and service providers to ameliorate environmental

Figure 1: The Lucknow Indicators Process

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                                    Review of Secondary
                                       Information
                                            │
              Instrument Design      Defining Selection Criteria for
                    │                   Study Neighbourhoods
                 Pre-test                       │
                    │                 Selection of Study
                                        Neighbourhoods
            Final Instrument Design            │
                                      Delineating Neighbourhood
      Selection of Local Service              Boundaries
         Providing Agencies                    │
                                      Developing an Understanding of
                                          the Neighbourhood
                                                                    Mapping the
                                      Selection of Households       Neighbourhood
      Selection of Officials            for Interviews
         for Interviews                                             Photographing the
                                      In-depth Interviews            Neighbourhood
                                        with Households
                                                    Community
                                                     Meeting        Indicators List
                In-depth
             Interviews with          Indicators Workshop           Indicators Survey
                                      Common Indicators List
                                                                    Thematic Maps
                            Comparative Analysis
      Survey Presentation
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conditions in neighbourhoods. Hence, the potential for community based initiatives and planning would be critical to its sustainability. This implies a level of commitment and initiative from the community. Discussions at the study design workshop had shown that there may be differences in the most appropriate set of indicators between (and even within) neighbourhoods as a result of the different concerns and priorities of residents, and differences in access to environmental infrastructure and service levels. Further, the process would have to be set in the context of institutional realities and existing strategic city-wide infrastructure and service levels, and have to address differential access to services across socioeconomic classes. This highlighted the need to review city-wide environmental conditions.

The review investigated historical settlement growth patterns; demographic and socio-economic data; inter-linkages of environmental services and their implications for environmental conditions and health; institutional decision making processes; regulatory and managerial constraints to service delivery; and resources bases of the service providers. The review helped locate the project in the city context and facilitated the formulation of appropriate approaches.

this experience are related to the potential for using community indicators in an area where the municipality has traditionally been less active.

III. SELECTION OF THE STUDY NEIGHBOURHOODS

A BROAD UNDERSTANDING of the city of Lucknow, its people and existing environmental conditions informed the selection of the study neighbourhoods. The large number of neighbourhoods and the diversity of conditions (social, economic and political) within them, together with budgetary constraints, ruled out the selection of a representative sample. The study was intended to be exploratory, whereby lessons learnt (on method and process) would provide information on the way forward. Hence, the study was restricted to four neighbourhoods. In these neighbourhoods, the study sought to capture some of the processes that occur at the city level. A list of potential study neighbourhoods was drawn up prior to fieldwork, based on the following criteria (informed by secondary data and past experience of work in the city):

Socio-economic class (SEC): The strong socio-cultural features of households in Lucknow (given the city's firmly entrenched character and ethos) are integral to their identity and behaviour. It was important to identify groups by socio-economic classes that went beyond mere economic categories. This segmentation took into account economic factors (asset base and monthly per capita expenditure), occupation and the caste/community to which the household belongs, neighbourhood profile, area of house and material of construction for the house. This provides an understanding of the household's current (social and economic) situation. More importantly, access to services and space to negotiate with local service providers varies across socio-economic classes – hence, the need to sample neighbourhoods inhabited by households across the socio-economic spectrum.

Location (core/periphery): There are important differences in Lucknow between the older habitations in the old central part of the city (the "core" – characterized by a pre-colonial ethos) and the newer, more cosmopolitan settlements in the "periphery". The core and the periphery have not only different socio-economic and cultural traits but also contrast in terms of physical features, infrastructure and services.[2] Within the core, there are differences between neighbourhoods located close to and far from nalas (large drains). In neighbourhoods close to the *nala*, the latter is a receptacle for sullage, waste and sewage. Hence, service arrangements and environmental conditions in such neighbourhoods are different (and often poor).

Tenure (secure/uncertain): Residents with secure tenure often have access to basic services and social infrastructure. They also enjoy some recognized (legal) position for negotiating with the local service providers. On the other hand, neighbourhoods with uncertain tenure (inhabited mainly by the poor/lower socio-economic classes) are often not provided with services and social infrastructure[3] and the residents in these neighbourhoods are not "recognized" by the local service providers and, thus, are not in a position to negotiate with them.

Existence of local organizations and history of collective action: Discussions at the study design workshop emphasized the need for commitment and initiative from the community for developing neighbourhood-level indicators through consultative processes and negotiating the same with the local service providers. There was also a recognition of the vital contribution that local organizations (including residents' associations, community based organizations and NGOs) could make in this regard. Hence, it

2. TARU (1996), *Socio and Socio-Economic Consultancy Report,* DFID/WSO, New Delhi.

3. TARU (1996), *A Study of the Low SEC Settlements in Lucknow (Baseline Studies: Vol.III),* DFID/WSO, New Delhi.

was decided to select neighbourhoods with functional local organizations.

While the criteria discussed above were used for the preliminary identification of study neighbourhoods, the following additional criteria were employed during field work:

Neighbourhood size: Each study neighbourhood has about 200-300 households. In larger neighbourhoods, a number of other interests such as divisions within communities, political leaders and landlords would have come into play and these could have vitiated the process; smaller neighbourhoods would not allow insights into the heterogeneity of socio-political processes and infrastructure functioning. Neighbourhoods with about 200-300 households keep operations manageable, allowing effective sampling for in-depth interviews and the involvement of residents in consultative processes. It also allows the field team to capitalize on existing social networks.

Willingness of local organizations to take part: It was clear that local organizations would have a critical role in this work. In addition to managing consultative processes for developing community indicators and negotiating the same with the local service providers, local organizations would be instrumental in providing infrastructure for community meetings and volunteers for various tasks. They would also be important for providing introductions to residents which is especially important in the conservative, core areas of Lucknow. Thus, the process was not initiated in neighbourhoods where local organizations were reluctant to participate.

Table 1	Key Information on the Four Study Neighbourhoods			
Selection criteria	Hata Mirza Ali Khan	Ashrafabad Balda	Iqbal Nagar	Vikas Nagar (sector VIII)
Location	Core – partly near drain (*nala*)	Core – partly near drain (*nala*)	Core – partly near drain (*nala*)	Periphery
Households	About 200	About 150	About 275	About 300
Socio-economic class (SEC) profile	Largely middle SEC	Largely low SEC	Largely low SEC	Largely middle SEC
Tenure Existence of local organization	Certain Local community based organization	Uncertain in parts local residents' association	Certain External NGO	Certain External NGO
Willingness of local organization to participate	High	High	High	High
SOURCE: TARU (1997) *Primary Study*				

Table 1 lists the four study neighbourhoods and summarizes some of their key characteristics against the selection criteria.

Much of the work in Lucknow was undertaken in the core areas because residents there have a greater affiliation to the "neighbourhood." This, it was felt, would help ensure that issues related to the environment and the implications for the neighbourhood would be addressed substantively. It was also felt that the variety of population groups resident in the core (and their established practices) would allow greater insight into

socio-political, tenurial and religious-cultural factors that influence household perceptions, practices and preferences. As yet, there is less diversity and less attachment by residents to their neighbourhoods in the periphery. The variety of service arrangements in the core also influenced the decision. Most study neighbourhoods have sections lying alongside drains (*nalas*) which allows the study to provide an understanding of the situation of the *nala*-side residents – often the poorest and the most vulnerable in the city.

The decision not to choose exclusively low or middle socio-economic class neighbourhoods in Lucknow's core areas allowed an investigation into the differential access to services within neighbourhoods. It also provided perspectives on whether the concerns of the disadvantaged groups within a neighbourhood are reflected in neighbourhood-level indicators. In largely middle socio-economic class neighbourhoods, the study helped gauge the perceptions of the middle-class (a powerful lobbying group in its own right) with regard to environmental conditions in the city. In largely low socio-economic class (poor) neighbourhoods, the study enabled some understanding of residents' vulnerability and their perceptions of the "environment" and institutional decision-making processes.

IV. PRE-TESTING THE INSTRUMENT

A PRELIMINARY CHECKLIST for discussions with households had been prepared prior to fieldwork. It was based on secondary information and issues discussed at the study design workshop. This checklist was pre-tested in selected neighbourhoods where the socio-economic profile, environmental conditions and service arrangements were similar to those in the four study neighbourhoods.

In the pre-test, respondents had difficulty in conceptualizing and articulating issues relating to the "environment". This led to information gaps and incoherent and irrelevant responses. In response, a more structured version of the checklist was developed and piloted. This helped to detect conceptual inconsistencies and flaws in the preliminary checklist and clarified the broad thrust of discussions. At this stage, researchers also explored the local idiom to phrase their queries. Once this checklist was finalized, local organizations were approached. The use of photographs and drawings to explore the "environment" was also discussed at this stage.

V. APPROACHING THE COMMUNITIES

BEFORE STARTING WORK in a neighbourhood, the representatives of local organizations were approached, directly or through a local contact. These initial meetings took place at the residence or office of one of the representatives. At these meetings, the aims and objectives of the project were explained along with the research agency's role in the project. So too was the concept of indicators and how it was proposed they should be used, along with a proposed follow-up to the project. The decision to choose the neighbourhood was elaborated on at length. Specific tasks that the field team proposed to undertake during the study were also explained.

The need for volunteers and the time and resources commitment required from the local organization was explained. The idea of an indi-

cators workshop which would allow interaction between community representatives and local service providers was not defined at this stage and, hence, not broached.

Meetings with local organizations were conducted in vernacular and the local idiom was used to explain complex issues. A common query related to whether the process was likely to influence institutional decision-making processes. In its responses, the team made clear that the assignment was research based and that there was little possibility of it influencing any institutional decision-making processes. It was also made clear that the outcome of the research process and the possibility of follow-up activity were uncertain.

Most local organizations were willing to participate in the initiative as they were desirous to learn about the neighbourhood they worked in. Some regarded the request to work with them as a recognition of their work whilst others saw it as an opportunity to guide organizations interested in undertaking similar work elsewhere. In an isolated case, a local organization expressed its reluctance to participate in the initiative, citing time constraints.

VI. NEIGHBOURHOOD LEVEL ACTIVITIES

PAST EXPERIENCE IN Lucknow and deliberations at the study design workshop had indicated that neighbourhood-level consultative processes would not, by themselves, be sufficient for the formulation of neighbourhood-level indicators. One reason for this is that, often, socio-cultural conditions do not allow women, poor and vulnerable population groups to articulate their concerns at neighbourhood meetings. Household level priorities often differ from neighbourhood/community level priorities. Thus, a variety of methods and tools were used to develop neighbourhood-level indicators including:
• in-depth household interviews to allow articulation of gender, poverty and household level perspectives;
• mapping exercises and photographs to enable an understanding of neighbourhood level priorities and concerns; and
• community meetings to integrate household and neighbourhood-level perspectives .

At the neighbourhood level, the following activities were undertaken:
Delineating neighbourhood boundaries: People's perceptions of their neighbourhood boundaries often overlap in the dense core areas of Lucknow making it difficult to differentiate one neighbourhood from another. Delineating neighbourhood boundaries assumes special significance in this context for clarifying the geographical area of operation and developing a preliminary understanding of the neighbourhood, its residents and existing environmental conditions. The exercise assumed additional importance given cases of community based initiatives that chose to include only parts of the neighbourhood (where the poor/ low socio-economic class households reside) and exclude others (inhabited by middle and upper socio-economic class households), thus failing to capitalize on existing social networks and making it difficult to establish links to city-wide service delivery systems. The delineation of neighbourhood boundaries was undertaken in consultation with local volunteers and youth groups.
Mapping the neighbourhood: Following the delineation of boundaries,

the team produced a neighbourhood base map that showed key geographical features, land use patterns, community and social infra-structure arrangements, house types, and the use of social and environmental spaces.

Developing an understanding of the neighbourhood: The preliminary understanding provided by boundary delineation and the base map was further developed by consulting the local organization and other residents. This looked at the caste, occupational and socio-economic profile of residents, awareness and perceptions of city and neighbourhood-level social and political dynamics, common household practices with a bearing on neighbourhood environmental conditions, and disposition towards local service providers. An attempt was made to triangulate and to interact with a diverse set of individuals. This also enabled a more objective view on the "representativeness" of the local organization.

Selecting households and respondents for in-depth interviews: Households were selected based on the understanding of the neighbourhood and available secondary data. In the pre-test, each household interview required about two hours. In the light of budgetary constraints, this meant eight to ten household interviews in each neighbourhood.

In household selection, considerable weight was given to socio-economic class to ensure that major caste/community and occupational groups residing in the settlement were represented. This involved interactions with residents from separate clusters within the neighbourhood as various caste/community and occupational groups often "gather" in a particular area. Such cluster-level interactions also revealed unique concerns relating to residents' integration with or exclusion from larger neighbourhood-level processes (owing to their caste/community or occupational affiliation) and those emerging from their geographic location (for example, location along a *nala*, residing in a part of the neighbourhood to which the piped water supply network does not extend, etc.).

Given the conservative nature of society in old Lucknow, there was little likelihood of women attending mixed community meetings. Yet, women in Lucknow (as in most other places) manage the household-environmental service interface and possibly suffer the most if services are inadequate. Hence, in-depth interviews were conducted largely with women. Special efforts were made to interact with poor households as there was some anxiety that their concerns may not find effective articulation in community meetings.

In-depth household interviews: Past experience in Lucknow showed that it is relatively easier for female researchers to access households and interview women. As a result, female researchers conducted the household interviews. They explained to each respondent the aims and objectives of the project and the indicators it sought to elaborate and use and why their neighbourhood had been chosen. The interviewees were also told about the outcome of the research process and about how the possibility of follow-up activity was uncertain.

A series of issues had emerged during the pre-test that hindered full responses. These were resolved as follows:

• Women respondents were often interrupted by men present in the household during the interview; in such cases, the respondents allowed them to continue and retired to their chores. In other cases, when the interview was in a semi-public place, neighbours and interested bystanders hindered the process, preventing respondents from expressing themselves freely. The use of two-person teams solved these prob-

lems. One member addressed persons likely to impede the interview, allowing the other member to continue the interview. In cases, where there were likely to be few interruptions, the second member proceeded with other enquiries.

- Middle-aged and older respondents were likely to feel shy/awkward drawing pictures of the neighbourhood environment. Hence, children were asked to draw pictures of the neighbourhood environment in the hope that it would interest the respondent. However, in most cases, the young children (the older ones were at school) did not understand the task or were reluctant to oblige. As a result, the idea was abandoned.

- The interviews often lasted two hours. This was taxing for most respondents and led to a number of interviews being cut short during the pre-test. Later, researchers told the respondent of the approximate duration of the interview and provided him/her with the option of continuing the interview at a later hour or date. One in three households granted an interview. In most cases, respondents expressed regret, citing time constraints. Others did not see much use in the exercise, particularly when its outcome and proposed follow-up were unclear. Amongst respondents, some saw merit in the exercise and expected benefits in the long run. Others, although sceptical of the research influencing institutional processes, agreed to the interview as they wanted to "reward" the researchers' efforts.

Photographing the neighbourhood: Volunteers from local organizations photographed the neighbourhood along three themes – the neighbourhood as residents would like it to be presented to an external audience; the prevailing environmental conditions; and the ideal neighbourhood (as residents would like the neighbourhood to be). For photographs of the ideal neighbourhood, volunteers were given a free choice of neighbourhoods across the city.

These photographs provided visual representations of residents' perceptions of their neighbourhood and prevailing and desired environmental conditions. They helped ensure that household concerns were integrated with neighbourhood-level perspectives. The photographs also stimulated discussion at community meetings, prompted discussion on desired interventions and provided the "vision" for formulating neighbourhood-level indicators.

Community meeting: This meeting was conducted after the household interviews. The date, time and venue for the meeting was set in consultation with the local organization. Residents were informed of the meeting well in advance. A separate womens' gathering was also considered. However, past experience in Lucknow had revealed that the task would be time-consuming and risked antagonizing more orthodox elements within the neighbourhood. The proceedings of such a meeting were also likely to be interrupted (or "hijacked") by casual bystanders. Hence, the idea was abandoned.

The community meetings began with introductions. As with each household interview, the field team explained the aims and objectives of the project, the role of the research team, the concept of indicators and the proposals for their use and for follow-up. The reasons for choosing their neighbourhood and the specific tasks undertaken by the team were also elaborated upon. The audience was also told that the outcome of the research process and the possibility of follow-up activity were uncertain.

After this, photographs were presented. The audience was told about the themes that the photos illustrated and was asked to comment on the

selection. Emphasis was to be laid on issues not covered/depicted in the photographs. The photographs generated an enthusiastic response from the audience and created a platform for further discussion.

This was followed by a presentation of the neighbourhood map on which the audience was asked to mark desired changes. This generated discussion on space availability and other geographical and tenurial constraints that could impede service delivery in the neighbourhood.

Then the audience was asked to select indicators that they would prefer to monitor, to gauge changes in the neighbourhood. To draw more relevant responses, the audience was asked to assume the role of a surveyor assigned the task of designing a questionnaire for an annual survey intended to understand changes in the neighbourhood environment. The neighbourhood-level community indicators emerged from the design of this questionnaire.

Some common factors influenced the choice of neighbourhood-level indicators across the study neighbourhoods. These were related to the profile of residents in the neighbourhood, to the concerns and priorities of residents, to the existing arrangements and their location, and to the perceptions of (quality of) service delivery and their impact on environmental conditions. Some neighbourhood-level indicators were also influenced by the agenda of local organizations and by the more articulate participants at the community meeting. Other factors influencing the choice of indicators were more neighbourhood-specific and related to the perceived space provided for negotiation by the tax/charge payment practices of households, to the representativeness of the community meeting (influenced by the venue and perceptions of the interests that the local organization represented), to the existing understanding of institutional practices, and to the deterioration in service levels over the seasons.

VII. INVOLVING OFFICIALS FROM SERVICE-PROVIDING AGENCIES

DELIBERATIONS AT THE study design workshop recognized that the indicators had to be acceptable to the service providers since they were to be used for setting priorities for urban environmental improvements and for monitoring and evaluating the quality of urban services delivered. This was all the more so in Lucknow where their regulatory position insulates them from the consequences of inadequate performance, and a deteriorating financial position and the overlap of responsibilities have eroded the culture of good service provision. The process had to take due regard of institutional realities – especially in terms of the indicators currently used, resource availability, and political, legislative and institutional arrangements that impede the efficacy of service delivery and the performance of the local service providers.

Short-listing officials: Officials from the local service-providing agencies occupy city, zonal, ward and neighbourhood-level positions. Interviews with officials sought to probe a range of issues related to the desirability and acceptability of the indicators process and its relevance in the current planning and performance appraisal framework. Issues related to policy, inter-organizational conflict, decision-making processes and the work environment were also investigated to understand their implications for organizational performance and service delivery (and, as a result, environmental conditions).

It was not proposed that the number of officials to be consulted be large, so few efforts were made to obtain a representative sample from different levels. Emphasis was laid on interviewing city, zonal and ward-level officials as their inputs were more likely to inform policy.

Pre-testing the instrument: A pre-test was conducted using an unstructured interview. The issues explored (informed by discussions at the study design workshop and from secondary information on institutional decision-making processes) were not difficult to conceptualize and articulate (compared to those relating to the "environment"). However, another set of issues emerged from the pre-test:

• Respondents were apprehensive of being quoted "out of context" – so they were assured anonymity.

• Most respondents, particularly those lower down the hierarchy, found it difficult to articulate broader concerns relating to organizational performance and quality of service delivery. This highlighted the need to use the local idiom.

• Respondents were discomfited by the duration of the interview and attributed it to its unstructured quality. Others were sceptical of a study which did not employ a structured interview. Others granted the interview over a couple of days/sessions and, invariably, responses on the latter day/session were carefully deliberated, not informal. These factors led to the development of a shorter, semi-structured interview, informed by issues that emerged from the initial interviews.

• Respondents were uncomfortable discussing organizational performance without sanction from superiors. This led to the research team approaching the top officials, asking them to communicate to their subordinates their commitment to the indicators process. This also ensured easier access to and greater cooperation from zonal and ward-level officials. When top officials were unavailable, local contacts were used to solicit interviews.

The pre-test helped formulate a strategy for the remaining interviews. As with the household interviews, each respondent was told about the aims and objectives of the project and the indicators it sought to elaborate and use; also about how respondents had been selected and the specific tasks proposed. Emphasis was given to how the use of indicators could improve understanding and lead to dialogue between residents and service providers.

Most respondents wanted to know why their work environment was being investigated for a study that intended to develop and use indicators. The field team explained how the work environment bore upon organizational performance and impacted on the quality of service delivery.

Most respondents agreed to the interview (attributable in part to the commitment demonstrated by the more senior officials and the use of "personal" contacts). There were instances of officials not granting interviews, citing time constraints and prior engagements. In other cases, interviews could not take place as the officials were on leave or attending an emergency.

VIII. ORGANIZING A COMMUNITY REPRESENTATIVE-SERVICE PROVIDER INTERFACE

THE NEED FOR an interface between community representatives and

service providers had been articulated by both households and officials. The consensus was that such an interface would allow a greater understanding and appreciation of each others' positions and the constraints under which they operated – and would set in motion a process of negotiation on neighbourhood-level indicators. The interface was also important for assessing the indicators' potential and for understanding the constraints to institutionalizing their use – especially for setting priorities for urban environmental improvements and monitoring and evaluating the quality of urban services delivered.

a. The Workshop

It was clear that the engagement between community representatives and service providers needed to be planned. Officials often had many commitments and, at times, appointments had to be rescheduled at the last minute. For any one-to-one interaction, community representatives would have to undertake a series of visits which would make unreasonable demands on their time. Community representatives wanted to interact with officials representing all major local service providers but, if this was to be done through one-to-one meetings, it would have prolonged the process. Also, community representatives wanted to interact with representatives from other study neighbourhoods.

Thus, the field team had two options. The first was to organize the community-service provider interface in each neighbourhood followed by a meeting of community representatives to exchange notes on their experiences. The other option was to organize a workshop drawing together representatives from all study neighbourhoods and officials from the local service-providing agencies. The latter was considered more prudent since it would ensure transparency and allow community representatives to be familiar with conditions and concerns in other study neighbourhoods.

The venue: There was some apprehension about the willingness of officials to engage with community representatives in their neighbourhood. Initial interaction with officials probed their willingness to entertain community representatives at their offices. Most officials were willing to oblige but felt that there was no novelty in this as it was a regular occurrence. However, organizing a meeting at the service providers' offices may not have allowed community representatives to freely express their concerns. Furthermore, interactions at the office could have been perceived as a grievance redressal exercise, not allowing deliberation on issues concerning the indicators initiative.

These factors prompted the choice of a neutral venue but one that was not "high-brow" as this would have inhibited responses from community representatives. Views varied on the most appropriate venue. Some team members felt that a *Lucknavi* venue (such as an old library or a well-known community hall) would be most appropriate – but these did not have the basic infrastructure necessary for meetings – including chairs, lighting and overhead projectors. The time and date for the workshop were decided in consultation with the officials and community representatives.

Selection of participants: Residents from each study neighbourhood chose two community representatives to attend the workshop at community meetings. In most cases, the residents chose individuals who had been associated with the local organization and were perceived as articulate, literate and committed to improving the neighbourhood environment.

Top officials from the local service-providing agencies were invited, since community representatives felt that discussions with lower and middle-level officials would serve little purpose as policy decisions and sanctioning authority rested with the top officials. Also, community representatives had interacted with lower and middle-level officials in the past.

There was some apprehension about inviting local NGO representatives. There were fears that NGO representatives would try to dominate proceedings and/or adopt an aggressive stance against officers and thus inhibit discussions. On the other hand, their presence was necessary as they are likely to assume a key role in initiating similar processes in other neighbourhoods. In the end, local NGO representatives were invited as "observers", to clarify their role to the workshop participants.

Invitations: Invitations were sent well in advance, giving the date, time and venue of the workshop, and included a briefing note informing participants of the work undertaken in Lucknow, the aims and objectives of the workshop and the agenda for discussion. Top officials and local NGO representatives were asked to confirm their attendance at the workshop or send a representative if they could not attend. Community representatives were briefed orally and it was emphasized that the workshop was not a grievance redressal forum but was intended to develop an understanding between themselves and service providers.

b. Deliberations at the Workshop

After introductions, the workshop began with a presentation of the consolidated list of neighbourhood-level indicators that had emerged from discussions with residents in the four study neighbourhoods. The next round of presentations were made by officials from the local service-providing agencies. In addition to detailing the key indicators that they used (mainly those relating to infrastructure provision, level of investment and the efficacy of grievance redressal mechanisms), the presentations dwelt upon how limited resource availability and political, legislative and institutional arrangements and constraints impeded the efficiency of service delivery and the performance of local institutions.

The officials also emphasized the residents' lack of awareness regarding the agency/office/official to approach in case of a problem, and defended their decision-making processes (perceived to be long-winded by community representatives) as necessary for organizational discipline and for checking irregularities. They also explained the process by which environmental conditions in the city were assessed (complaints by residents, the local media and municipal councillors; regular inspection visits); the complaint/grievance redressal, and operation and maintenance mechanisms that exist; and the norms for installing environmental services infrastructure (for example, no two standposts are to be located within a distance of 200 metres from each other).

The community representatives appreciated the constraints that service providers faced relating to the current institutional arrangements and a limited resource base. They were also in agreement about the lack of awareness regarding the agency/office/official to approach in case of a problem and expressed the need for more information on how, where and to whom complaints should be made. This, it was felt, would require greater information and transparency on existing institutional arrangements and decision-making processes and a responsive and efficient grievance/complaint redressal system. The information on the process by

which environmental conditions were assessed highlighted the role of the local media and municipal councillors and led to community representatives exploring the means by which their attention could be drawn to the problems faced by residents.

Community representatives agreed that certain household practices adversely affected neighbourhood-level environmental conditions – for instance, the use of booster pumps for pumping water out of the mains, large-scale illegal use of electricity and piped water connections, and the disposal of household waste into *nalis* (storm water drains), *nalas* and sewers. Some of these practices were ascribed to households' limited awareness of their impact on environmental conditions while others were traced to the lack of infrastructure. For instance, it was felt that residents deposited household waste onto the street, *nali* or *nala* because there were no bins available in the neighbourhood.

The presentations by officials from local service-providing agencies were followed by an exercise in which the participants were asked to suggest modifications to *less important* indicators from the consolidated set. This was to be done whilst bearing in mind the limited finances and resources at the disposal of the local service providers, and other political, legislative and institutional constraints.

The participants held the view that the indicators were pointers to a more desirable state and should undergo minimum modification, even though action on all fronts may not be possible in the short term (largely owing to resource constraints). However, keeping the existing indicators unchanged would act as a constant reminder of the areas in which energies need to focused in the future. A number of new indicators were introduced to the existing list. These were informed by the discussions during the course of the workshop and related to the responsiveness of the complaint redressal fora, to comparing payment of dues to quality of services received, to encroachments on *nalis* and their repair, to the solid waste disposal practices of households, to the frequency of secondary solid waste collection, and to the disposal of faeces from service latrines. Box 1 shows the consolidated list of indicators that emerged following the workshop.

During interviews with officials, the common practice of using booster pumps, of encroachment on local storm drains, of solid waste disposal (into storm and surface drains, streets and vacant plots), and the reluctance to pay dues were cited as factors affecting the performance of the local service providers. The post-workshop indicator set, it was felt, would ensure that such practices were monitored at the neighbourhood level.

Residents' concerns related to the responsiveness of the local service providers and the degraded environmental conditions owing to poor storm drainage maintenance; the infrequency of secondary solid waste collection and the disposal of faeces from service latrines were also addressed in the post-workshop indicator set.

The participants held that the post-workshop indicator set reflected the concerns of both communities and local service providers in a more "complete" manner and appreciated the fact that discussions at the workshop had informed the selection of more appropriate indicators.

The participants held the view that a forum for regular interaction would afford the community representatives an opportunity to articulate their common concerns and could lead to the formation of a pressure group that would meet relevant officials and discuss issues that required the immediate attention of local service providers. Community represen-

Box 1	Post-workshop Indicator Set

Water supply
• percentage of households with piped connections
• water availability (summer months)
• comment on pressure
• percentage of households using booster pumps
• number of standposts in the neighbourhood/community cluster
• percentage of households paying water tax
Note: the indicator for "number of standposts in neighbourhood/ community cluster" rather than "persons per standpost" reflects the preference for "exclusive" standposts over arrangements shared with the floating population in adjoining commercial areas or with residents of another caste/ community. The cost of water and storage method within the home did not emerge as issues of concern during discussions with communities.

Sewerage and sanitation
• percentage of households with "undesirable" arrangements
• percentage of households reporting blocked or choked sewers
• percentage of households paying sewer tax
• percentage of households using private help for clearing choked sewers
Note: "undesirable" arrangements refers to latrines discharging into local storm or surface drains, service latrines, community latrines and open defaecation. These are considered "undesirable" by residents as they are perceived as unhygienic, malodorous and primitive.

Drainage
• arrangement for drainage in front of premises
• arrangement for street paving in front of premises
• frequency of drain cleaning
• episodes of flooding inside house
• percentage of households built upon the *nala*

Solid waste
• dumping point for solid waste by household
• number of depots in the neighbourhood
• frequency of street-cleaning
• attendance level of sweeper (who is responsible for keeping streets clean)
• percentage of households disposing of solid waste after sweeper's rounds

Electricity
• hours when electricity is available in the day (summer and non-summer months)
• comment on voltage
• frequency of meter-reading
• percentage of households paying electricity tax
• percentage of households reporting over-billing

SOURCE: TARU (1997), *Primary Study.*

tatives also decided to discuss the idea of collecting contributions with residents in their neighbourhood in order to finance minor development works. This would mean that the local service providers were approached only for works that required a substantial commitment of resources. Some community representatives expressed reservations about the ability of such a forum to act as an effective pressure group, given the following:
• difficulties in a joint articulation of problem prioritization (as conditions

and concerns in each of the study neighbourhoods are different);
- large geographical distances between the study neighbourhoods (inhibiting regular interaction);
- discord amongst community representatives in situations where neighbourhoods would be competing for limited funds;
- low level of sensitization in the lower rungs of the institutional hierarchy;
- limited importance attached to a surveyor residing within the neighbourhood;
- dependence of the process on the incumbent official, in the event of the transfer of officials with whom a working relationship had been established.

Further deliberations on these issues were as follows:

- data from the house-to-house surveys could be used to gauge the gravity of a problem within a neighbourhood. This would enable prioritization of interventions across neighbourhoods (in case funds available for particular work were limited). Since the survey data would be used for prioritization purposes, and the survey methodology and results would be transparent, there would be less discord from competing for limited funds. Also, there would be little chance of the study neighbourhoods competing for the same funds as they are located in different zones (each with separate funds);
- geographical distances would not inhibit regular interaction as the telephone would enable regular information exchange. Community representatives would need to meet less often, only once every two months, to discuss more important issues and concerns. Meanwhile, the community representatives would continue to articulate the concerns of the neighbourhood as they have been doing in the past;
- the indicators survey could be done by exchanging volunteers/surveyors between communities. However, it was felt that the indicators survey would be best conducted by volunteers from within the community as they would be more familiar with and sensitive to local conditions. The community representatives held the opinion that due importance would be attached to volunteers conducting the survey, if those conducting the survey had demonstrated a commitment to the welfare of the residents in the past;
- top officials from the local service providers would need to communicate their commitment to the indicator initiative to officials lower down the institutional hierarchy to ensure a more responsive climate;
- it would be important to institutionalize the use of indicators in the decision-making processes of the local service providers to ensure that the constant movement of officials did not inhibit the process. Such commitment towards institutionalizing the indicator initiative (particularly if demonstrated by top officials) would also help sensitize officials lower down the institutional hierarchy. Until such time as the use of indicators is institutionalized, the community representatives decided to engage with officials in their official capacity (and not at a personal level).

At the end of the indicators workshop, the community representatives pledged to meet every two months (with the venue for these meetings to be decided by rotation). Initially, the community representatives would be making a joint representation before key officials in the local service-providing agencies. Subsequently, they would liaise with officials from local service-providing agencies on their own. In their meetings, the community representatives proposed to:

Box 2	Sanitation Arrangements in the Study Neighbourhoods – A Comparative Analysis

All households in Vikas Nagar (sector VIII) reported sewer connections. In contrast, the sewer network did not extend to any of the other study neighbourhoods and a significant proportion of the households in these neighbourhoods (61 per cent in Hata Mirza Ali Khan, 74 per cent in Iqbal Nagar and 93 per cent in Ashrafabad Balda) reported "undesirable" arrangements (mainly latrines discharging into storm and surface drains, service latrines, community latrines and open defaecation).

Given the prevalence of "unacceptable" sanitation arrangements in these neighbourhoods, it is not surprising that residents (across all socio-economic classes) expressed their willingness to opt for sewer connections once the pre-requisite public infrastructure is extended to them. If the proportion of households with "unacceptable" sanitation arrangements is taken into account, works would have to be initiated first in Ashrafabad Balda, followed by Iqbal Nagar and Hata Mirza Ali Khan.

However, the ability of the resident population to make household investments, the potential for integration with the existing (city-wide) sewerage system, and level of investment, would have to be borne in mind before a final decision is made. For example, the largely low socio-economic class population in Ashrafabad Balda and Iqbal Nagar may not be in a position to make household investments for connecting to the system. This, in turn, would limit the returns on investment for the local service-providing agency. There is also a need to explore options that are cost-effective for the local service-providing agency, affordable for the residents and technically feasible for service delivery.

- discuss strategies for approaching relevant officials;
- identify the local service providers agency and relevant officials who are directly responsible for particular work; and
- exchange notes on their experiences with the local service providers agencies and reformulate strategies in the light of such experiences.

IX. INDICATOR SURVEY – DESIGN AND PROCESS

DELIBERATIONS AT THE study design workshop established the need for a survey on neighbourhood-level indicators to benchmark existing environmental conditions and track future environmental conditions. This was reinforced by discussions at the indicators workshop. Deliberations at the workshop also highlighted the importance of having data from house-to-house surveys to allow the prioritizing of interventions between neighbourhoods. Thus, the proposed indicator survey had two objectives – to benchmark existing conditions and to test whether the results had potential for use in prioritization of infrastructure provision and service level improvements. The idea of depicting survey results on thematic maps was also investigated at this stage to ascertain whether such mapping allowed spatial identification of problem areas within neighbourhoods and highlighted groups of households whose concerns were inadequately reflected in the neighbourhood-level indicators.

The indicators survey collected data on the post-workshop indicator set to enable inter-neighbourhood comparison. An exception was made for one study neighbourhood where the nature of local arrangements led to several indicators that were not applicable to other neighbourhoods.

Plans for a transect based (stratified sample) survey were discarded in favour of a door-to-door survey. This, it was felt, would allow spatial identification of problem areas and highlight households whose concerns were inadequately reflected in the neighbourhood-level indicators.

The survey used a structured instrument to make enquiries on various parameters reflected in the post-workshop indicator set. Residents were, by and large, aware of the work undertaken in the neighbourhood and

few explanations were required about the aims and objectives of the indicator survey.

Attempts to involve local organizations in the survey did not succeed, with volunteers citing time constraints. As most volunteers had already committed substantial time to the process, the matter was not pursued. However, local organizations and community representatives were confident about conducting similar surveys in the future although a few foresaw problems with data analysis.

At the end of the exercise, preliminary survey results and minutes of the indicators workshop were made available in Hindi and English to the community representatives. They were asked to circulate the document among residents and generate neighbourhood-level discussions. They were also told that the survey results presented were based on a preliminary analysis and that it would be prudent to await final results before approaching the service providers.

The final analysis of data collected after the workshop shows that an indicator survey can be used to benchmark existing environmental conditions. It shows how detailed maps of each neighbourhood can be produced showing, for instance, the quality and extent of provision for piped water, sewers, drains and paved roads for each household, as well as their reported solid waste disposal practices. It also shows its potential for use in prioritizing infrastructure provision and service level improvements. However, there emerged a series of factors that would have to be addressed before survey data could be used as an active planning tool. For instance, there is the issue of whether particular groups of households can afford to contribute to the investments such a survey might recom-

Box 3	Drainage Related Indicators in Iqbal Nagar

The streets in the northern, western and central parts of the neighbourhood are paved with brick and some have good quality (*pucca*) drains alongside. However, nearly half the premises in Iqbal Nagar have no drains or poor quality (*kutcha*) drains, and/or no paving to their fronts (see Figure 2). Such arrangements are reported to lead to waterlogged conditions soon after a downpour. This situation is further compounded by the infrequency with which storm drains are cleaned; 90 per cent of the residents reported that these drains are rarely cleaned or not cleaned at all.

The flooding of large drains, leading to water entering the house was reported by a little over one-third of households. Nearly one-fifth of households reported between six and ten such episodes of flooding in one year, with another one-sixth of households reporting between one and six episodes. Residents held that the common household practice of disposing solid waste into drains (nearly one-fifth of households reported this practice) caused their blockage thus leading to flooding.

The indicator for drainage at Iqbal Nagar was related to the arrangement for drainage and street-paving in front of each household. The selection of such an indicator could be attributed to the fact that nearly half the household premises do not have any paving and/or drains there. It might appear odd that concerns relating to the low frequency of storm drain-cleaning and flooding were not reflected in the indicators developed at the community meeting, as only a section of the neighbourhood (largely inhabited by Shia Muslims) has adequate provision for drainage and street-paving and the residents of this section would have expressed concerns relating to the frequency of street and drain-cleaning. However, the community meeting was held in a largely Hindu section of the neighbourhood where there are few provisions for drainage and street-paving (and concern over the lack of storm drains was paramount). The community meeting venue ruled out participation by Shia Muslim residents and thus the possibility of indicators relating to the frequency of storm drain-cleaning.

Households that reside along the main drains are more affected by flooding inside the house. Most of these households belong to the Muslim community. Few members of the Muslim community chose to attend the community meeting held in the Hindu section of the neighbourhood – so concerns related to flooding from the main drains were not reflected in the indicators developed at the community meeting.

mend – Box 2 illustrates this by identifying a group of households who may not be able to afford the household investment to connect to sewers, if sewers were installed. Furthermore, the presentation of data on (settlement-level) thematic maps allowed spatial identification of problem areas and highlighted resident groups whose concerns were inadequately reflected in the community indicators. (See Box 3 for an example of how the priorities of one group in a neighbourhood were not reflected in the indicators set.)

X. A WAY FORWARD

THE LUCKNOW INDICATORS process is, in many ways, unique. But it was constrained before it could be "scaled up" or institutionalized. It was initiated as part of a large proposed bilateral development assistance programme to improve urban environmental services for Lucknow but the programme was subsequently cancelled. It is difficult to project what role and impact this process might have had if the environmental services improvement programme had been implemented – but feedback from service providers and residents shows that with some initial external support, it may have taken root.

The indicators initiative explored a variety of methods and tools to design a protocol for developing community based indicators that reflect the concerns of hitherto excluded or marginalized groups. It also integrated household and neighbourhood level aspirations with wider city-level infrastructure upgrading. The dialogue between community representatives and service providers, using community defined indicators to benchmark existing environmental conditions, represents an important step forward within the Indian context. It also demonstrated the potential for institutionalizing the use of community based indicators in assisting urban environmental improvement (and prioritization within this) and in facilitating participatory monitoring and evaluation of the quality of services.

In terms of taking the process further, the study highlighted a number of constraints to the use of indicators as an "active" planning tool. These are outlined below.

• Many of the most relevant neighbourhood-level indicators are strongly influenced by local priorities or contexts including location, density, socio-economic profile, existing arrangements and service levels, and household practices and preferences. As a result, the most appropriate indicator sets for each neighbourhood may differ, which limits the possibilities for generating aggregate statistics for a city and for neighbourhood comparisons.

• Interventions suggested by neighbourhood-scale indicators need to be re-examined in the light of constraints and opportunities on a wider spatial scale – and thus situated within city-wide service provision and municipal institutions that respond to cross-sectoral problems. The successful dialogue between neighbourhood representatives and service providers indicates that an iterative process of participatory planning and monitoring can be operationalized using a framework similar to this, with appropriate modifications.

• Technically feasible and cost-effective service delivery options at the city or zonal levels may not enjoy effective demand within neighbourhoods due to local preferences or to inability or unwillingness to pay. The indi-

cators process enables a rapid, cost-effective method of articulating these apparent "contradictions" that so often inhibit the management of most service expansion, rehabilitation and upgrading projects, especially in cities with a considerable social and institutional history.

- In the case of poor and vulnerable groups, empowerment and facilitative processes are needed to protect their interests within ostensibly community based processes. It would also be important to develop and institutionalize objective means of gauging vulnerability and of facilitating the prioritization of investments that are the priorities of less articulate and less powerful participants.
- The institutionalization of these processes is largely determined by the institutional and political culture of service-providing agencies and municipal institutions. The relative openness of officials in Lucknow brought a degree of convergence to the dialogue that may not be possible in many other locations. The presence of external agencies may have a significant impact on this climate.

This implies that an indicators process may be used to create the space for negotiation between service providers and communities, benchmarking existing environmental (and other) conditions, monitoring and evaluating the quality of urban services and setting priorities for urban environmental improvement. But this would have to be linked to a series of parallel processes to ensure long-term sustainability and integration into planning, budgetary processes and the political economy of service provision. This, in turn, would require considerable commitment by local service providers, communities, policy makers and donor agencies to building a process that could last from a few months to years, depending on local conditions and constraints. Among other things, this would entail:

- a thorough review of city-wide environmental conditions to describe, in detail, the differing neighbourhood-level realities in terms of environmental, living and housing conditions with special emphasis on the situation of poor and vulnerable groups;
- examining and negotiating existing norms for service delivery, and consultative efforts (between residents and service providers) to explore service delivery options that are technically feasible, cost-effective (for the service providers) and preferred and affordable (by residents);
- designing assistance packages and empowerment processes that address "barriers" to household investments by the poor;
- exploring the institutionalization of the indicators process via the establishment of an independent performance monitoring system for urban environmental services. This may be crucial where new forms of public-private partnership or private operation and ownership of services is being tried.