



Regional Water & Sanitation Group-South Asia
UNDP / World Bank Water & Sanitation Program

Overseas
Development
Administration

CASELET 4

Dissemination Notes

ODA assisted Habitat Project in Indore

Summary

The Indore Habitat Project (IHP) assisted by the Overseas Development Assistance of UK has been able to demonstrate that solutions to water supply and sanitation services need not be confined to preconceived norms perceived to be suitable to the income status of the areas. These solutions lie between the expensive traditional sewer systems and the imposition of the lowcost hand pumps and pit latrines. The significance of IHP lies in pointing to the need for further understanding of these solutions, especially on the costs and sustainability, when these solutions emerge as the choice of the community who are willing to pay for these services. When the extent of willingness to pay of the people are known it should be possible to realistically assess the subsidy requirements and the manner of administering it. Similar solutions are being promoted in Baroda (UNICEF assistance), Ahmedabad (Corporation, local industry and NGO initiative) and a couple of other ODA projects under preparation. It is therefore an opportune time to understand the circumstances under which these solutions respond to community demand revealed through participatory processes; how these can be made replicable and sustainable; and the institutional and public policy implications.

Background

1. The ODA¹ assisted Indore Habitat Project (IHP) has been under implementation since 1990. The objectives of the project are:

- to integrate the slums into the economic and social networks of the city;
- to improve physical conditions for some of the poorest families in Indore;
- to improve standards of health, literacy and basic education;
- to increase income earning potential;
- to develop community organizations and institutions;
- to provide security of tenure;
- to encourage self-help improvement of housing;
- to strengthen local government, non-government organizations (NGOs) and the slum committees to ensure that the assets created are properly maintained and project benefits sustained.

2. The project has the following components: Roads, storm drains, street lighting, water

¹ ODA is perhaps the only donor with years of working in the low income settlements of many a city in India.

supply, sewerage, public latrines and bath-rooms; construction of community halls, dustbins and upgrading of government dispensaries; primary health care, primary, adult and non-formal education; employment promotion; support for community self reliance and leadership; and support for community recreational activities.

Why Indore?

3. The visit to Indore was prompted by the report of Himanshu H. Parikh, engineering consultant to the project. The report elaborates the concept of slum networking² and its application to the IHP. The report alludes to the widening gap between investment requirements and resource availability due to the growth in slums and the deficiencies in the urban infrastructure. This, the report says, calls for alternative mechanisms which cost a fraction of the present costs and the slum networking concept is response to that.

² Slum Networking is an integral upgradation of the entire city using slums, not as individual settlements but as an urban net, exploiting the inter-linkages between the slums and also the transitions between the slums and city fabrics.

4. The following paragraphs dealing with the slum networking concept, design parameters and cost figures are from the tract on networking written by Parikh.

Advantages of Slum Networking

The *spatial spread* of the cities and *contiguity* forming a loosely connected networks enables infrastructure to be developed at the total city level.

Very high densities - 25% population living in 5% of the area, provides the scope for making a *massive impact* on the city by concentrating on a twentieth of the landmass.

It is incremental. In the conventional systems replacing the additional branches added to the system with well balanced loops is expensive. But it is possible in networking to add short links in between the branches to turn them into loops.

The *location of the slums* in the in the marginal lands and on the natural water courses can influence the *layout* of the gravity based infrastructure without land acquisitions and demolitions.

The catalytic nature of networking and emphasis on participation *triggers investment* from the private sector and enhances the chances of *contributions from beneficiaries* - an underestimated and untapped source. Many families willing to invest on kitchens toilets and plumbing To capitalize on individual sewer connections. Instances of investments of Rs 10,000 to Rs 80,000 at one go have been reported. The idea of services for payment works and large number of slum dwellers prefer to become rate payers if individual services are provided. In addition networking solutions are *cheaper*. Networking can be achieved only with the active co-operation and *participation* of the public. The first step is to encourage the formation of strong community group. These groups together with the committed NGOs can interact at the project formulation an design stages, participate in the execution, maintain the facilities and manage cost recovery.

Indore - Demographic profile

The following table gives an idea of the growth of slums in Indore.

	1971	1981	1991	2001
Total Population (000)	560.98	827.07	1250.00	1800.00
Annual Growth Rate %		4.74	5.11	4.4
Slum Population (000)	100.00	208.00	350.00	540.00
Annual Growth Rate %		10.80	6.82	5.42
Slum Population as % of Total Population	17.82	25.15	28.00	30.00

Source : IIDA - 1989, Indore Habitat Project Report

As per the study of the Indore Slums made in 1990 by Indore Development Authority 40% of the slum population are children upto the age of 14 years; only 8% and 19% have gone upto secondary school and middle school; average monthly household income is Rs 1007/- with 41% in the range of upto Rs 750 (below poverty line) and 27% between Rs 751 and Rs 1000; and gross land area per family of

The following table summarizes the survey results of access to water supply and sanitation facilities and preferences.

% of households	All selected slums
Using public taps/standpost Individual taps	68
Using fields/open drains/roadsid public toilet individual toilet	
Desiring individual toilet Ready to pay for individual toilets*	
Bathing inside the living area of the house or in the toilet	

* Among those desiring individual toilet.

Coverage

5. The ODA Project covers 183³ slums with a population of 0.45 million (35% of the total Population). 35% of the non slum population of the city will also benefit from the project (refers to the trunk infrastructure for conveyance and treatment of sewage). The municipal corporation will bear the o&m costs which are proposed to be recovered by levying taxes on the upgraded slum families and imposing connection charges on the non-slum population for better services.

DESIGN PARAMETERS

Water Supply

6. Existing systems were selectively repaired by salvaging existing handpumps and wells. The cost was less than Rs 500/- per family as against the conventional cost of water supply of Rs. 1000/- per family. The emphasis was on house connections for reasons of better maintenance, greater convenience and better sewage flows. Greater use of looped networks was made for even distribution. C.I pipes were used for main roads and cement pipes for internal runs.

Sanitation

7. Piped sewerage was proposed as it was found to be more acceptable in terms of hygiene, use preference, maintenance costs and durability. For better flows the system was designed to carry both soil sewage and foul water (SICs). Cost per each slum family for sewerage and centralized treatment was Rs 1500/- and Rs 1000/- for off-site collection and treatment, as against Rs 2500/- for UNDP twin pit latrine. Further cost comparisons are given in the next page.

³ Including 22 slums previously upgraded under a World Bank financed project.

PO Box 93190, 2509 AD THE HAGUE

Tel.: +31 70 30 689 80

Fax: +31 70 35 899 64

BARCODE: 13975

LO: 305.1 960D

Component	Slum Networking Method	Conventional City System
	Rs. in million	
Outfall drains	60	200
Sewer mains	100	200
Distribution Systems	220	400
Pumping stations		30
Capitalized pumping costs		20
Total	380	850

8. The project *sustainability* was planned to be achieved through sensitizing individuals and institutions, creating community cells in corporation, making provision for resources, training.

What led us to have a closer look at the Project?

9. The UNDP/World Bank Water and Sanitation Program is interested in examples where people, particularly the poor, make choices on the basis of what they can pay. Additionally they make these choices with the benefit of information shared with them and the capacities conferred on them through engineering intermediation. Thus the solution that emerges are flexible engineering solutions and not rigid models taken out of manuals. These solutions are likely to be based on realistic appraisal of the post-project o&m requirements vis a vis the capacity of the community. All these factors will contribute to project sustainability. The report of Parikh talks about cheaper alternatives of delivering the services to the slums in a way as to improve the quality of life in almost the whole city and that these alternatives have emerged through a participation process inherently capable of effective cost recovery and proper operation and maintenance. Moreover the solutions adopted in Indore-piped water supply and sewerage - depends on response from formal utilities. This provides an added reason as the Program is interested in studying the institutional options and to contribute to the understanding of who is good at what and under what conditions among the formal and informal organizations.

Participation

10. In a case like this one would naturally look for participation of a kind enabling the community to make the design choice matching with their willingness to pay and their ability to operate and maintain. The slum networking concept elaborates on the role of community participation in order to make the technical options a matter of choice and argues that solution beyond hand pumps and pit latrines are possible with cost sharing by community. But

the project design does not provide for any special role to community participation which would make the community adopt the engineering designs and standards of the slum networking concept as a matter of choice with knowledge of the implications for them in terms of cost sharing and maintenance. The community participation component of the project is almost independent of the engineering activities and concerns itself more with social and economic activities like education, health and employment. Of course, within the broad general role of creating awareness and capacity among the community of their responsibilities, the following instances of participation were quoted:

- sacrificing a courtyard in a house for construction of a road;
- shifting of a house to make way for community hall;
- labour contribution; and
- cost contribution for sewer line in one slum (Rs 80/- per household).

There was thus no scope in the project design for the technical solution to evolve through an iterative process.

11. **The formal implementing agencies:** The Indore Development Authority (IDA) oversees the engineering aspects of the project. On questions related to detailed engineering aspects the IDA project cell will have us believe that Parikh is best suited to answer some questions. Also they know that this is a project which will be handed over to the Municipal Corporation whose capacity and preparedness are issues yet to be sorted out.

12. **Sustainability:** The quality of infrastructure provided has been beyond the GOI norms and impressive. One of the slums visited was better looking than an MIG housing colony on its periphery. But the proper use and maintenance of the services will depend on a few factors. If they are absent the consequences can be imagined (see the tables in the paras 13 and 14).

Water Supply

13. The use of house connections that have been provided will

depend upon	if not
augmentation of quantity for reliable services	accentuation of distribution inequities, failure (non compliance) to pay waterbills; private investments in well-off areas where service levels are affected and possible environmental costs
strict technical supervision of the manner of providing connection and detection of illegal connections	more leakages and more inequities

Sanitation**14.** The use and sustainability of the sewerage will

<i>depend upon</i>	<i>if not</i>
all houses constructing latrines and connecting to the system*	investments on trunk as well as branches within the slums will become infructuous;
augmentation of quantities of water supply	less flow in the line;
branch infrastructure in 35% of the non-slum area where trunk infrastructure has come up	chances of choking and silting

* access to credit through Bank loan being tried

15. The solutions that respond to demand that is revealed through a participatory process are more sustainable because the community will have a sense of ownership for such solutions leading to proper use and maintenance. Such solutions are advocated in opposition to the past approaches characterised by supply of services determined by norms. In the Indore project too the approach is somewhat driven by norms in as much as a single solution is offered. However there are merits that it is allegedly cheaper (para 7) than conventional sewerage systems and provides for a solution beyond the uncritical choice of hand pumps and pit latrines for the low income areas. However a word of caution would be in order on the claims on costs. More information would be needed on how comparisons are made which is the basis for such claims. For example the use and benefit of sewerage depends on maximum number of households connecting to the system and hence for comparison purposes latrine construction cost should be included.

16. Replicability: Government of India is committed to convert all the dry latrines and provide new latrines at households without access to sanitation. This means allocating resources for subsidy at 50% of the per capita latrine cost to approximately 30% of the urban households. This is proving to be beyond the capacity of the government to provide in a time bound manner. So replicating the Indore experience with public funds, without knowing what the people can pay and what should be the minimum non-distorting subsidy for any particular option, seems financially infeasible. The lesson is that it would be useful to provide for an intense iterative process of participation on engineering and cost aspects in order to see what solution emerges as a choice and why. The number of household that will actually connect to the system after fully appreciating the costs alone will tell whether the system was what the

community wanted. An agreement between the slums and the Corporation is being contemplated to take care of the latter's role in o&m and the former's responsibilities. The question that comes to mind then is, if the solution provided did not, in the first place, cater to the demand of the community what are the chances of enforcing the commitments that are now (post-project) sought from the community by the Corporation through the proposed agreement.

17. The community participation component of the project has been extended upto 1997. It would therefore be interesting to see

A) what efforts are made to arrive at roles of and the relationship between the community and corporation through participation in order to ensure proper use, operation and maintenance (though provision of infrastructure is a fait accompli)?

B) what mechanisms agreed to in order that each comply with the agreed commitments that the defined roles will entail. It will be no mean achievement if this can still be addressed in the extended phases of community participation. This would demonstrate the scope, if any, for the community to make the choice by spelling out what they can pay for the service that have already come up and what they expect in turn from the Corporation.

The significance of Indore lies in understanding more about the circumstances under which intermediate level alternate solutions become viable and sustainable implementation option. The fact remains that the large scale replication would require such engineering solutions to be tailored not only to what the community wants and is willing to pay for but to that minimum of subsidy for environmental and/or poverty considerations.

Principal author:

K.S. RAMASUBBAN
Programme Officer

RWSG-SA
55 Lodi Estate, New Delhi 110 003
Tel.: 4690488/9, Fax: 4628250

Reviewed by:

MIKE SLINGSBY
Former First Secretary

Urban Poverty Office
ODA, B 2 Anand Niketan
New Delhi 110 021

Tel.: 6876379/5973, Fax: 6882954