THIRSTY CITIES
WATER, SANITATION
AND THE URBAN POOR

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Prepared for World Water Day 1996 and for the
City Summit - Habitat II

WaterAid

Thirsty Cities: Water, sanitation and the urban poor

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Introduction

On World Water Day 1994, WaterAid published a report entitled *Mega-Slums: the coming sanitary crisis.* It sounded a warning: 'Is modern urban growth set to bring back the historical spectacle of the disease-ridden city from which the uninfected take flight?'

In September 1994, around 500,000 inhabitants of the Indian city of Surat – one-quarter of its population – fled from an epidemic of pneumonic plague. The disease had spread from detritus and the rotting carcasses of livestock washed up in the slums after heavy monsoon floods.[1] The deaths among several hundred suspected cases were relatively few, but this did not prevent widespread panic, nationally and internationally. Quarantines were imposed on aircraft landing from India in a number of countries.

The outbreak of plague, and its accompanying outbreak of fear, provided an answer to the rhetorical question posed by WaterAid's report.

This year, **Habitat II** – the UN's second global conference on Human Settlements or 'The City Summit' – will be held in Istanbul. Many of the issues set out in *Mega-Slums* will be raised during the Conference debates on what is now termed the 'brown agenda': the increasingly pressurised environment of urban settlements.[2] The growing volume of urban humanity in today's world requires new consideration of the ways in which space and amenities should be managed so that city and townscape provide a liveable and healthy habitat.

The availability of clean water and systems of waste disposal in all urban areas, including slums and shantytowns, is a vital piece of the puzzle. An urban space is, by definition, shared by its citizens. Pollution or epidemic in one part is a risk to all and to others easily reached by modern communications systems in cities and countries elsewhere.

This **Briefing Note** for World Water Day 1996 provides an update of the facts concerning the sanitary crisis facing residents and authorities in many parts of the urban Third World. It sets out the key changes in infrastructural policy needed to bring the crisis under control, and examines the recent record of policy and practice for signs of progress.

The Surat epidemic sensationally underlined the many challenges – technological, managerial, social and financial – facing providers of water and sanitation services in towns and cities the world over. Are public health engineering authorities and their partners in private industry seriously beginning to confront that challenge? Or will it take new outbreaks of plague and cholera to bring home to municipal and national leaders the high price of global squalor?
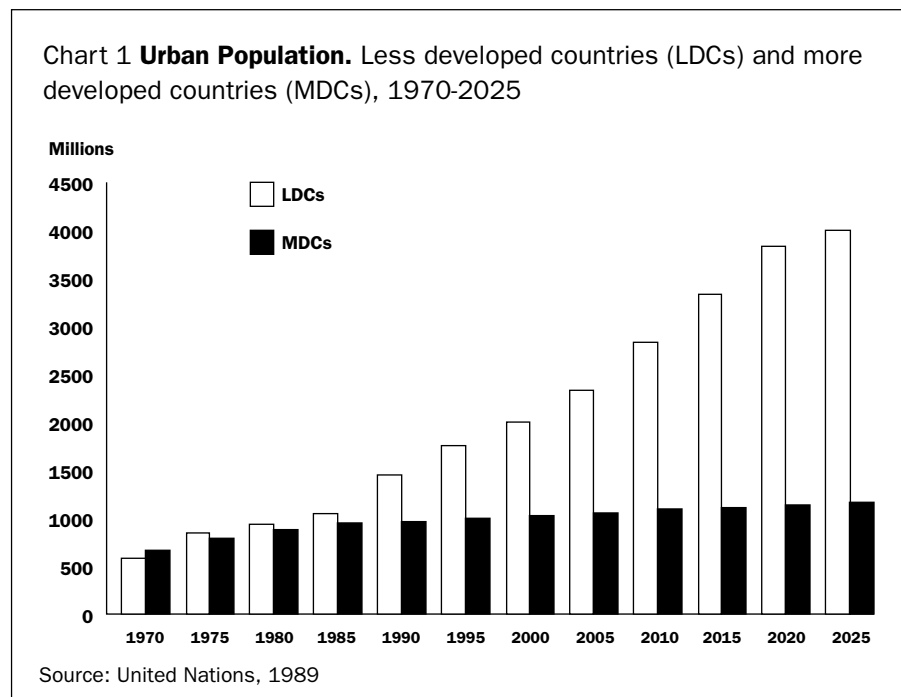
1 **The Economist,** 7 October 1994.

2 Information note on **The City Summit** produced by Habitat II Secretariat, UNHCS, Nairobi, 1996.

Part 1
Urbanisation and the global sanitary crisis

At or very soon after the new millennium, the human race will pass a demographic milestone: a majority of its six plus billion members will have become urban dwellers. Around one-third of these urbanites will be living in conditions of environmental deficiency characterised by squalor.

The global demographic shift is largely being fuelled by the rapid pace of population growth and of urbanisation in the developing world, especially in Asia and Africa. [*See Chart 1.*] Whereas in North America and Europe, urban population grew by less than 1 per cent during the 1980s, in Africa – the most rapidly urbanising region – it grew by 5.5 per cent a year between 1985-90, and in Asia – the most populous region – by 3.1 per cent.[3]

Chart 1 **Urban Population.** Less developed countries (LDCs) and more developed countries (MDCs), 1970-2025

Source: United Nations, 1989

The coincidence of acute human poverty, overcrowding, poor housing, lack of investment in civic infrastructure, job shortage and environmental stress in many fast-changing settings are the ingredients of the sanitary crisis facing urban Asia and Africa. These features of urban life also afflict many cities in Latin America, where cholera reappeared during the 1990s for the first time this century.[4]

One product of global urbanisation is the spectacular growth of 'megacities' – usually defined as metropolitan areas with more than 10 million inhabitants. By 2000, there are expected to be 21 megacities, of which 17 will be in the developing world.[5] The image they conjure is of the vast metropolis devouring the countryside and peripheral urban settlements mushrooming out of control.

Certainly, the megacities' human and resource base management present huge problems. Mexico City, Jakarta and Beijing are examples of cities running short of water and forced to exploit ever more distant sources at ever greater cost.[6] Downstream pollution caused by city wastes are also a growing cause of anxiety. Buenos Aires, for example, treats only 2 per cent of its sewage: a figure typical for middle-income Latin American countries.[7] The Yamuna River passing through Delhi receives nearly 200 million litres of untreated sewage every day.[8]

Whatever the megacities' mega-problems, they should not be allowed to obscure the fact that most urban dwellers live in smaller cities and towns –

3 **Cities, People and Poverty,** A UNDP Strategy Paper, UNDP New York, 1991.

4 **Our planet, our health,** Report of the WHO Commission on Health and Environment, WHO, Geneva, 1992.

5 **Cities Survey,** *The Economist,* (World Bank figures), 29 July 1995.

6 **Mega-Slums: The coming sanitary crisis,** WaterAid, 1994.

7 Serageldin, Ismail, **Water Supply, Sanitation, and Environmental Sustainability: The Financing Challenge,** The World Bank, Washington, 1994.

8 **Our planet, our health,** op cit.

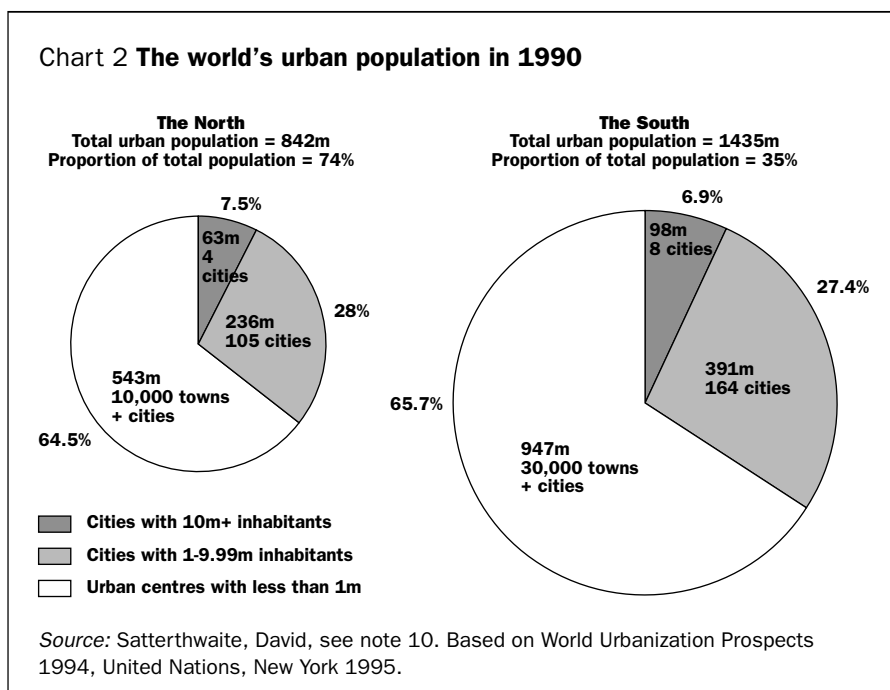9 **World Urbanization Prospects,** 1992 Revision, United Nations, New York.

10 Satterthwaite, David, **The scale and nature of urban change in the South,** IIED, London, 1995.

11 **UNICEF Programmes for the Urban Poor,** UNICEF Executive Board, E/ICEF/ 1993/L.9, 23 February 1993; and Cairncross, S., Hardoy, J.E. and Satterthwaite, D., 'The urban context' in **The Poor Die Young: Housing and Health in Third World Cities,** London, Earthscan, 1990.

12 Satterthwaite, David et al, 'Primary Environmental Care' in **The Environment for Children: Understanding and acting on the environmental hazards that threaten infants and children and their parents,** Earthscan publications, London, 1996 (forthcoming).

13 Satterthwaite, David, **The underestimation of urban poverty and of its health consequences,** *Third World Planning Review,* 17 (4) 1995.

some of which are still very large. More than half live in cities of less than 500,000 people, and 40-45 per cent live in towns and cities of less than 100,000 people.[9] [*See Chart 2.*] These urban habitats may be as much in need of sanitary attention as the great metropolises whose downtowns throng with tourists, shoppers and businesspeople – and which therefore guard their reputations more carefully.

Chart 2 **The world's urban population in 1990**

Source: Satterthwaite, David, see note 10. Based on World Urbanization Prospects 1994, United Nations, New York 1995.

The 'brown' agenda – the urban sustainability agenda – also embraces places such as Surat and the other approximately 30,000 urban centres in the South[10] whose names tend to remain internationally obscure unless they become notorious. Mega-slums are as much a problem of small and medium-sized cities which are growing as fast or faster than the mega-cities and have fewer resources to devote to solving the public health problems of our rapidly urbanising world.

The numbers of urban poor have been underestimated

At least 600 million people in the developing world's towns and cities live in 'housing that is so overcrowded and of such poor quality, with such inadequate provision for water, sanitation, drainage and rubbish collection, that their lives and their health are continually at risk'.[11] This figure represents 40 per cent of the 1.4 billion total estimated Third World urban dwellers (1993), and many authorities regard it as the best guide to the numbers of the urban poor.[12]

The figure is much higher than the World Bank's estimate of 330 million, which is based on income level rather than on conspicuous manifestations of poverty. On-the-ground city surveys support the higher estimation. The 1976 World Housing Survey found that in the urban Third World, the proportion of those living in poor neighbourhoods was typically one-third to one-half, and in some cities – for example Bogota, Luanda, Mexico City and Addis Ababa – was much higher. Research undertaken for a new Global Report on Human Settlements to be published by the UN Centre for Human Settlements (UNHCS) for Habitat II indicates that these proportions still hold good, and that the levels of urban poverty quoted in influential international publications of the World Bank and UNDP are very likely to be underestimated.[13]

5

Poor neighbourhoods in the urban Third World come in all shapes and sizes, from a few households to the thousands conjured by the term 'mega-slums'. Although the conventional image of poverty-stricken urban growth is of transitory squatter settlements on the city's edge, many are pockets located in its heartland, along river banks, roadsides and railway tracks, even in disused cemeteries. Some settlements are on public land, others on private. Often the nature of the land – it is flood-prone, or precipitous and liable to collapse – is the reason that the very poor live there. The diverse character of the settlements and the circumstances of their inhabitants makes them difficult to describe according to universal norms.

Few slum or shanty residents escape paying rent to some kind of landlord. But because their settlements occupy space designated unfit for habitation or tenanted illegally, they are ineligible for services – water, waste disposal, power, roads – and treated as officially invisible. The settlements' fluidity and elasticity – extra dwelling units are added and subtracted at will – and the irregularity of everything concerning their inhabitants' lives contribute to their exclusion from official censuses and surveys. Since the worst problem slum-dwellers face is insecurity – from flood, fire, collapse, clearance or eviction – they usually evade the authorities' notice. All these factors reinforce the under-reporting of urban poverty.

The problems of life in the urban slum have been underestimated

Most rural families in Asia, Africa and Latin America can still meet many of their requirements for household utilities from the natural environment. Fuel is gathered, water is collected from the river, lake or local well and is therefore 'free' – except in women's time and labour spent in porterage.

By contrast, in towns and cities, essential supplies of household water and fuel are much more difficult to obtain. In many slums and shantytowns, especially in illegally occupied land, there are no fuel or water-point connections to households, sometimes not even to neighbourhoods. In Dhaka, for example, 37 per cent of slum-dwellers have no safe supply of drinking water; some are reduced to using ditches and potholes.[14] Women, who even in town normally retain the traditional task of providing domestic utilities although they cannot be gathered from the wild but must be paid for, have to manage from whatever source they can.

Where there is no piped supply, the price of water from a private vendor with a tanker or a lease on a communal tap tends to be very expensive. These vendors are the only source of supply from between 20 and 30 per cent of poor urban dwellers.[15] Some towns and cities have such unreliable public systems that households are forced to supplement their water supplies from these private informal sources; invariably, the poor pay proportionately far more for their supply than the better-off.[16]

Slum residents typically spend between 10 and 40 per cent of their incomes on water, and may pay 10, 20, even 100 times what the public water systems charge.[17] [*See Table 1.*] Since the water they buy is so expensive, personal hygiene is bound to suffer.

The more densely settled a human habitat, whether rural or urban, the more acute problems of waste disposal and sanitation become. They are at their worst in narrow alleys, bustling backstreets and congested shantytowns where lack of facilities is not only a serious public nuisance but a health hazard. Slum inhabitants often cite a cleaner environment as their number one priority.[18] Their efforts to dispose of waste may contribute to environmental hazard in the wider community – for example, by polluting local waterways or spreading sources of infection, leading to epidemics.

14 **The Urban Poor in Bangladesh,** UNICEF Dhaka, 1992.

15 Cairncross, S, 'Water Supply and the Urban Poor' in **The Poor Die Young,** op cit.

16 **World Development Report 1994,** The World Bank, Washington.

17 Ibid. and Padmini, R., Bakewell, A., Fernando, M., **Matching the Agenda of the Urban Poor,** Unpublished UNICEF Paper, 1994.

18 Among other examples, see 'Green Flag over Baldia pit latrines' (Karachi, Pakistan) in **Who puts the water in the taps?** Earthscan Publications, 1983, and Haaga, Elin, **A Case Study of the Slum Improvement Project, Bangladesh,** UNICEF Bangladesh, 1992.

19 **Human Development Report 1994,** UNDP and Oxford University Press.

20 Background paper prepared for UNDP-World Bank Water and Sanitation Program Workshop, London, 12 January 1996.

21 Satterthwaite, David, **The underestimation of urban poverty,** op cit and **Our planet, our health,** op cit.

22 Ibid.

23 Bairoch, Paul, **Cities and economic development from the dawn of history to the present,** Mansell Publishing Ltd., London, 1988.

24 **Water Supply and Sanitation Sector Monitoring Report 1990 (Baseline Year),** WHO/UNICEF Joint Monitoring Programme, New York, 1991.

25 **Water Supply and Sanitation Sector Monitoring Report 1993.**

Table 1 **Differentials in the costs of water between poorer and richer groups.**

City	Price ratio of water from private vendors: public utility	City	Price ratio of water from private vendors: public utility
Abidjan	5:1	Lima	17:1
Dhaka	12:1 to 25:1	Lome	7:1 to 10:1
Istanbul	10:1	Nairobi	7:1 to 11:1
Kampala	4:1 to 9:1	Port-au-Prince	17:1 to 100:1
Karachi	28:1 to 83:1	Surabaya	20:1 to 60:1
Lagos	4:1 to 10:1	Tegucigalpa	16:1 to 34:1

Source: World Bank, *World Development Report 1988*.

Officially, urban populations in the developing world are much better off than rural when it comes to 'safe water' and 'sanitary means of waste disposal'. According to UNDP, 85 per cent of developing countries' urban inhabitants have access to safe water, and 75 per cent access to sanitation – figures 20 per cent and 30 per cent higher than for rural populations.[19] However, according to recent analysis for the 1996 Global Report on Human Settlements, these figures appear to be inflated. They are certainly unrepresentative of the situation in Africa and Asia/Pacific, where – according to the latest figures from WHO/UNICEF – 40 per cent and 38 per cent of urban populations have inadequate means of sanitation.[20]

Evidence suggests that the proportion of urban residents provided with adequate safe water supplies and sanitation has been heavily over-stated.[21] The inaccuracies partly derive from the variations with which authorities interpret the meaning of 'adequate' – both in regard to water quality and numbers served. Taps with over 1,000 users have been known to qualify, as have communal latrines used by dozens of households and constituting a worse health risk than open-air defecation. These definitional discrepancies contribute to the exaggerated picture of service coverage some governments are inclined to portray.[22]

The urban poor suffer more ill-health than rural dwellers

Until early this century, urban living in Europe and North America was much less healthy than country living and people regularly decamped from town to escape outbreaks of infectious disease.[23] Only the advent of sewers, covered drains, household water connections and universally accessible medical care transformed the modern city into a healthy habitat.

The reality that urban living is still extremely unhealthy in environments where these facilities do not exist has been obscured by biases built into urban data. Because almost all better-off people live in town, the average picture of life the statistics convey bears no relation to life in the slums and shantytowns; such distortions occur much less for the countryside, in which a far lower proportion of wealthy people reside.

Recent attempts to re-draw the contours of urban-rural discrepancy give a very different picture from that conveyed by standard data. A survey of 35 countries found that average access to safe water was 64 per cent in marginal urban areas, and 67 per cent in rural areas.[24] The need to avoid averages and to collect meaningful data is now better understood. The WHO/UNICEF Joint Monitoring Programme for the water supplies and sanitation sector now invites countries to report separately on 'Urban High-income' and 'Urban Low-income' populations, and increasing numbers of countries are doing so.[25]

Table 2 **IMR in low-income urban vs. other areas.** (Per 1,000 live births)

Location	Year	National	Low-income urban areas	Other urban areas	Rural areas
Dhaka, Bangladesh	1991	116	142	68	93
Guatemala City	1989	54	50	48	
Karachi, Pakistan	1985	120	95-152	32	
Managua, Nicaragua	1987	56	60	50	60
Port-au-Prince, Haiti	1983	110	200		66
Porto Alegre, Brazil	1985	70	75.5	25	
Sao Paulo, Brazil	(c. 1983)	80	175	42	

Source: UNICEF, 1993 (see Note 11)

26 **UNICEF Programmes for the Urban Poor,** op cit.

27 Ibid.

28 **Our planet, our health,** op cit.

29 Study conducted by Centre Muraz, Bobo-Dioulasso and the London School of Hygiene and Tropical Medicine; reported in **On the Waterfront,** Issue 7, UNICEF WES Section, New York, May 1995.

The lack of services and facilities in poorer neighbourhoods inevitably increases their squalor; this is bound to impact on health and hygiene standards. UNICEF has pointed out that, where the data exists, Infant Mortality Rates (IMRs) are almost always higher in low-income urban areas than the national average and than in rural areas.[26] [*See Table 2.*]

Much of this heavy mortality and disease burden among the children of the urban poor can be attributed to diseases common in congested urban areas such as diarrhoea, tuberculosis and parasitic infestation (intestinal worms) associated with lack of safe water and sanitation; malnutrition is often a compounding factor, increasing physical vulnerability.[27]

Germs present in water, food, or on dirty hands are the most important cause of sickness worldwide. All the classic epidemics – cholera, dysentery and typhoid fever – are spread in this way. Waterborne infections cause 1,500 million episodes of diarrhoea and four million deaths in infants per year.[28] UNICEF's analysis suggests that a much higher proportion of these than previously realised may well be in shantytowns and slums.

Lack of taps and sanitary facilities are not the only problem. Ignorance about the connections between dirt, germs, and childhood diarrhoea, especially among women, is at least as important. In the town of Bobo-Dioulasso, Burkina Faso, 90 per cent of household compounds have pit latrines. Nonetheless, a recent study found that a high proportion of infants' and children's faeces ended up on the ground or somewhere other than in the latrine: the importance of their hygienic disposal was not understood. Failure to dispose properly of these wastes was associated with double the risk of hospitalisation with severe diarrhoea.[29]

Part 2
Creating a new world order in water and sanitation

Since the publication of the *Mega-Slums* report in 1994, there has been evidence that steps are slowly being taken to respond to the global sanitary crisis. This update to the original report has been prepared in the hope of accelerating changes along the water and sanitation frontier.

The ingredients of the crisis are being better researched, better understood and cumulatively acted upon. The WHO/UNICEF Joint Monitoring Programme's efforts to highlight water and sanitation problems in poor urban areas has already been noted. WaterAid itself and some other NGO and international organisations are seeking out opportunities for improving hygienic standards in slums and squatter environments. The attention given to the *Mega-Slums* report and its thesis can be seen as an illustration of institutional recognition throughout the water and sanitation sector – public and private – that new approaches are needed.

Habitat II – the 'City Summit' – at Istanbul in June 1996 will further raise consciousness about the implications of global urbanisation for environmental health and well-being. The Summit provides a special opportunity to highlight the interactions between poverty, acute pressure on space, lack of sanitary amenities and epidemic disease. And it provides a forum in which to explore alternative, more positive prospects for the expanding cityscape and townscape.

The **Habitat II** preparatory committee's draft statement of principles quotes the renowned urbanist, Lewis Mumford: 'The positive functions of the city cannot be performed without creating new institutional arrangements, capable of coping with the vast energies modern man now commands: arrangements just as bold as those that originally transformed the overgrown village and its stronghold into the nucleated, highly organised city'.[30] If the City Summit captures this spirit, it could open a new era in the fight against squalor and ill-health.

Gaining ground for a new set of principles

Principle 1   **The city is not a monster**

The emergence of the 'brown agenda' indicates that a kindlier view of the city as a habitat to be accommodated rather than demonised is gaining ground. Negative stereotypes about the nature of global urban change are beginning to lose their hold. It transpires that – with the exception of sub-Saharan Africa – many of the most rapidly urbanising developing countries are those doing best economically.[31] The idea that city growth in the South is in itself an unqualified disaster – an idea reinforced by talk of 'exploding cities' and 'urban populations growing out of control' – is being challenged, and hopefully can be whittled away.

As a product of the 'brown agenda', more organisations trying to promote development and alleviate poverty are beginning to embrace the urban citizenry within their mission. Those who previously turned their back on urban habitats because they were privileged and rich have begun to recognize that, in the latter years of the 20th century, entrenched misery is as much an urban as a rural phenomenon and must be addressed in situ, as well as by improving life in the countryside.

Principle 2   **The urban poor are resourceful and can pay for services**

The reappraisal of urban change has, in turn, helped to erode the stereotype of poor urban dwellers as drifters who have strayed temporarily into town, and for whom nothing should be done which would encourage them to stay. The urban poor are not temporary residents whose needs can be ignored. Natural growth among existing urbanites – not migration from rural areas – is responsible for over half the increase in their numbers.[32] The policy of flattening squatter

30 Mumford, Lewis, **The city in history: Its transformations and its prospects,** Harcourt Brace, New York, 1961; quoted in **Draft Statement of Principles and Global Plan of Action,** Preparatory Committe for Habitat II, A/Conf.165/PC.2/3, Nairobi, 13 March 1995.

31 Satterthwaite, David, **The scale and nature of urban change in the South,** op cit.

32 **Human Development Report 1990,** UNDP, quoted in **UNICEF Programmes for the Urban Poor,** op cit.

settlements and evicting their inhabitants is futile: new squatter settlements invariably appear elsewhere.

More still needs to be done to promote the picture of poor urban dwellers as contributors to town and city economies rather than as parasites upon them. Not only do they provide labour – often at ludicrously cheap rates – for the organised workplace, but they fill a vast range of semi-formal and informal occupations including porterage, transport, market trading, construction and domestic service. Water vending is itself one of the entrepreneurial activities in which they engage.

Yet municipal authorities still often regard their slums and shantytowns as no-go areas infested with illegal and unwholesome activities. They deliberately withhold access to amenities and services, obliging their inhabitants to provide their own or do without. Services provided to the better-off, meanwhile, are usually subsidised. For example, in Dhaka, Bangladesh, according to a report commissioned by WaterAid, households with piped connections are charged Taka 4 (approximately 6p) per 1,000 litres of water; slum-dwellers typically pay Taka 1 per 10-litre pitcher.

The resourcefulness of the urban poor in meeting their own needs for housing, jobs, domestic utilities and community care is still under-appreciated. Only a very few conform to the image of passive indigents waiting for the delivery of benefits from a cash-strapped city purse. Many are thorough-going entrepreneurs, operating within extremely tight margins. The proven willingness of most slum-dwellers to pay for utilities and services – as long as the services meet their needs and are properly run – transforms the complexion of the urban poor 'problem'.

Principle 3   **Conventional mains and drains are inappropriate and unaffordable for urban poor areas**

The pattern of infrastructural development for water supplies and sanitation established by the 19th century public health engineering revolution in Europe and North America is not suitable for much of the urban developing world, where it mostly benefits the better-off leaving the poor unserved. Since the 1980s International Drinking Water Supply and Sanitation Decade, it has been abundantly clear that if the urban poor have to wait until their turn comes for the conventional package of sewerage and household water connections, they will wait for ever. At prices of up to $550 per connected household,[33] the costs are prohibitive.

The search for cheaper solutions to the problem of mounting urban squalor demands further experimentation with low-cost, lightly engineered technologies. As set out in the *Mega-Slums* report, the technology to be used in any scheme should be no more complex than strictly necessary, sturdy, and cheap to install and maintain. Trials with different components, cheaper materials and varying dimensions would help cut costs and increase the options on the technological shelf.

However, technology is only one part of the necessary response, which also requires a revolution in engineering thinking. Assumptions about how to fund, manage and operate services which have dominated the sector ever since its inception must be challenged.

Principle 4   **Public bodies providing water and sanitation services need to be reformed**

The sanitary reformers of the 19th century removed water-borne disease control from the province of individual action into the realm of public administration. The aim of many late 20th century reformers is to put it back, ending the imperial sway of the engineers as know-all and do-all providers. Individual and

33 **UNICEF strategies in water and sanitation,** UNICEF Executive Board, E/ICEF/ 1995/17, 13 April 1995.

community action should play a part in service delivery, and consumer response be the test of effectiveness.

The World Bank – among others – has persistently pointed out that public utilities in the developing world have an extremely poor performance record and are crying out for reform.[34] The *World Development Report 1994* on infrastructural development illustrated how water, sanitation and other public service bodies in the Third World install wasteful systems, and run them inefficiently and in ways that are insensitive to the needs of users. The bodies are, in addition, uneconomic, typically failing to recover more than one-third of their costs. As currently staffed and structured, many can barely manage to operate their existing networks of installations, let alone extend services to reach the poor.

Under the new water and sanitation order, services will have to be run according to cost-efficient principles and practices. Private sector involvement will be needed and governments will take on a different role, functioning as facilitators and guardians of the policy and regulatory framework rather than as monopolistic providers. From the perspective of better services for poor neighbourhoods, the new-style bodies will be in the novel position of being able to support and encourage community-based service provision.

Principle 5 **Environmental sustainability matters**

Since the 1992 Earth Summit in Rio de Janeiro, concern has intensified for the concept of 'sustainability' of natural resources and their management. Governments trying to adhere to the Summit manifesto *Agenda 21* have begun to appreciate that fresh water is as finite as any other natural resource and must be assigned an economic value.

Cities running out of water are being forced to recognize that they cannot secure their water supplies without reference to the needs of rural populations whose environmental resource base they are draining. Similarly, failure to treat effluent adds to the level of pollutants deposited downstream, creating health hazards not only in a metropolitan area but in the countryside around.

The costs to the environment of poorly designed, poorly managed and unregulated water and waste disposal systems are beginning to be counted. In many towns and cities where services are erratic or inadequate, inhabitants supplement their supplies by digging wells or building storage tanks. This puts extra pressure on groundwater and often leads to its pollution.[35] Environmentally-friendly services are the only solution – even though they may have to be higher priced for better-off users. The alternative is more environmental health disasters, as in Surat.

The advantages of greater economic efficiency regarding both investments and management of services are multiple. Not only can water supplies be preserved and pollution controlled, but costs can be recovered. However, where new pricing structures are introduced by public utilities bodies, care should be taken that the poor are not made to bear the brunt of extra payment. As a principle, cost recovery for water consumption *above basic levels* should be introduced before insistence that the poor pay the full cost of their basic supply; they may, however, choose to do so at community level. Private entrepreneurship in water and sanitation needs to be fostered in appropriate settings and not regarded as an efficiency and sustainability panacea.

Principle 6 **The involvement of users is a must**

If the new order in water and sanitation is to have any chance of success, service delivery systems must capture the energies and resources of users as well as planners and engineers; they must be designed and managed *with*

34 **Water, water everywhere,** *The Economist* 24th February 1996.

35 Falkenmark, Malin, **Water Supply for a Rapidly Growing Population: Taking a Resource-based Approach,** Keynote Paper for the Third Collaborative Council Forum, Barbados, 30 October-3 November 1995.

people not *for* them, including people living in deprived neighbourhoods. This principle is now central to the rhetoric of all international organisations. It is a principle demanded both by practicality and equity.

Since the urban poor are currently excluded or marginalised from access to services by the way they are built and managed, finding ways to involve them requires an upheaval in municipal attitudes and practice. Public health engineering departments, utilities companies and their international partners will have to depend on organised expressions of the citizenry – in community groups and water associations.
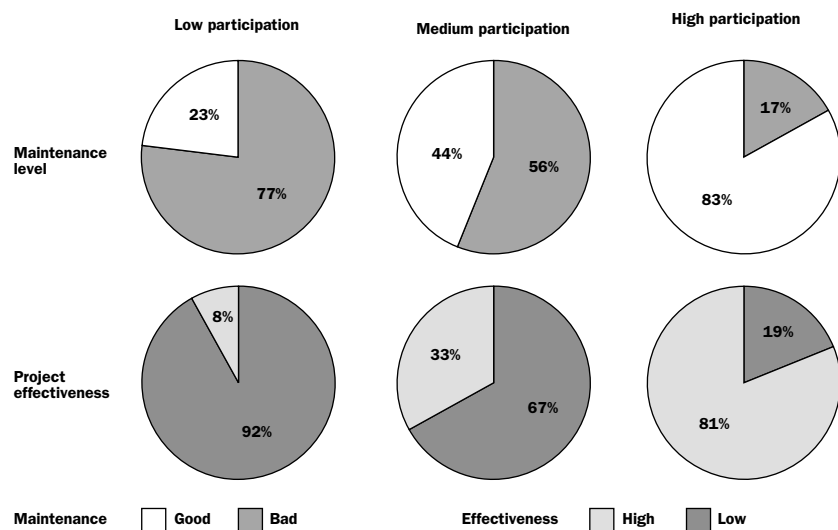
Evidence shows that the participation of beneficiaries and grass-roots institutions in planning and implementing projects is a key factor in their success or failure over the long term.[36] [*See Chart 3.*] Without citizen involvement, projects often founder during implementation or are subsequently not maintained. These are lessons that the NGO community with its micro-level preoccupations has long been aware of. Now they are being recited as gospel by organisations operating at the macro-economic and infrastructural planning level.

Principle 7   **NGOs have a linchpin role**
The recognition of NGOs in developing countries as linchpin partners in providing services that reach and serve the poor continues to gain ground.[37] Their numbers now run into the scores of thousands and their variety in genesis, size and type is immense. Many provide services in poor communities, placing as much importance on remedying people's ignorance and sense of powerlessness as on remedying the effects of service deficiencies such as squalor and ill-health.

NGOs can play a vital intermediary role between unwieldy official bodies and community-based groups. This can help squatters overcome legal and institutional obstacles to self-improvement. For example, in Dhaka, Bangladesh, a local NGO – Dushtha Shasthya Kendra – acted as guarantor for the security deposit required by the Water and Sewerage Authority to install water points in poor neighbourhoods, and for the regular payment of water bills. The installations are entirely run as community enterprises; not only are bills

36 **World Development Report 1994,** op cit.

37 **Human Development Report 1993,** UNDP and OUP, Oxford, 1993.

Chart 3 **Participation increases water project effectiveness by improving maintenance.**

Low participation   Medium participation   High participation

Maintenance level — Low participation: 23% Good, 77% Bad; Medium participation: 44% Good, 56% Bad; High participation: 17% Bad, 83% Good.

Project effectiveness — Low participation: 8% High, 92% Low; Medium participation: 33% High, 67% Low; High participation: 19% Low, 81% High.

Maintenance ☐ Good ▨ Bad   Effectiveness ☐ High ▨ Low

Source: World Development Report, 1994

regularly paid, but the facilities have brought down water costs dramatically to users while managing to reap useful profits.[38]

Mobilising work by NGOs is also needed to establish viable user groups within a community organisation structure. This is the key to successful payment of user fees and tariffs. In some schemes, for example in West Bengal, user groups put aside funds for pump repairs, maintenance and eventual replacement even before their first pump has been installed. Committees are established in the communities to help build cottage industries around the promotion of latrines and hygienic products.

Principle 8   Women must take part in decision making

The involvement of women in water and sanitation schemes has long been held to be axiomatic. In the poor urban environment of the Third World, women are the principal providers of water for the household, as well as its principal users. But it has often been difficult in a technology-dominated man's world to gain acceptance that their views should be fully canvassed. Women are now finally being assigned an active role in the sector, instead of being seen merely as beneficiaries of improved domestic amenities and family health. They are being trained, and locally accepted, in such roles as handpump repairers and supervisors.

Some features of life in poor neighbourhoods need special gender-related attention. Communal bathing and sanitation facilities, for example, need to be designed in such a way that lack of consideration for feminine modesty does not inhibit their use.

A high proportion of households in poor urban areas are today headed by women for whom the presence or absence of a water supply has social and economic implications. These are among the poorest households in any urban setting, and those for which the high prices charged by water vendors are a particular drain on family resources and a threat to health. Some may also depend for an income on the availability of a water supply, for example, those making a living from fast-food beverages and snacks.

Women's participation in services can be organised either through secured places on management committees, or through independent women's groups – whichever seems more likely to ensure genuine involvement, not tokenism. Their presence not only enables services to be planned and managed with their needs in mind, but helps promote the health and hygiene benefits of services.

Putting principles into action

The 1994 *Mega-Slums* report presented the thesis that nothing less than a new sanitary revolution, recapturing the vigour and creativity of the 19th century reformers as well as its sense of social responsibility, was required to meet the global sanitary crisis. The principles which would underlie such a revolution have already emerged, and are outlined above. Accumulated experience in the projects and programmes applying such principles adds to the conviction which WaterAid brings to advocacy on their behalf.

But if such a revolution is truly to gather momentum, and if the goal of 'Water and Sanitation for All' is not to remain an impossible dream, much more effort will have to be made to translate these principles into practice. The following is the agenda of actions proposed by WaterAid to bring this about.

1   At country and municipal level

- **The creation of new partnerships:** The growth of relationships on the ground, between local government and NGO and community groups, has taken time to evolve. In many urban settings it has yet to do so. Too often, the lack of

38 Rashid, Haroon and Haider, Iftekher, **Social Intermediation: A Key to Water Supply Provision for the Urban Poor in Dhaka City,** undated paper for the UNDP/World Bank Water and Sanitation Programme, Bangladesh.

interaction leads to isolated, small-scale, low impact activities by voluntary organisations of few means. If their projects can be coordinated in a comprehensive programme which involves official bodies, benefits can be multiplied many times over.

- **Reviewing NGOs and helping enhance their capacity:** In Kenya, WaterAid has undertaken a review of NGOs active in the urban sector in an effort to identify partners interested in the sanitary agenda.[39] Other funding organisations could help to develop inventories of NGOs and community-based organisations (CBOs) working to upgrade the conditions of life in slums and shantytowns with a view to identifying gaps and common possibilities for action to upgrade service infrastructure and community health.

- **Training in appropriate technologies:** Many small NGOs are not equipped to take on infrastructural schemes without technical training and professionalisation. In Asia, the dissemination of low-cost technologies often requires the establishment of training centres where local artisans can be taught how to make such items as pour-flush latrines, with the subsequent possibility of setting up local enterprises and supplying sanitary 'demand'. This model has proved surprisingly successful in parts of Bangladesh, India and Indonesia.

- **Networking and exchange of experience:** NGOs gain a lot from sharingexperiences and information. Often, their links with donor organisations in the industrialised world are better developed than those with similar organisations in their own countries. Shared knowledge may help them replicate an existing project model. WaterAid is currently paying for staff of the Orangi Pilot Project in Karachi, Pakistan, to travel to other cities in the country and pass on their expertise to other local NGOs. (For a profile of the Orangi project, see the *Mega-Slums* report.)

- **Pressure on local authorities:** WaterAid staff on the ground have identified a strong need for those working in urban slums and shantytowns to exert combined pressure on municipal and local government authorities – and their international donors and creditors – to facilitate the provision of services in poor neighbourhoods. Efforts should be directed at attitudinal change towards the needs and resources of the poor, and institutional reform within public health engineering departments and utilities.

2 At international level

- **Serious commitment to the new water and sanitation order:** In spite of all the rhetoric among international donors that there is need for reform, and in spite of consensus about the principles to be applied, there is still insufficient evidence that they are using their leverage to bring change about. A commitment should be made that no major public utilities' project for a city or urban area will receive international finance unless there are in-built plans for providing services to poorer neighbourhoods. Unless the international water and sanitation community can be seen to mean what it says, the necessary attitudinal change among municipal officials and water industry leaders cannot take place. This constitutes the major blockage to the new sanitary revolution.

- **Greater involvement by international NGOs:** The identification of poverty in the developing world exclusively with rural areas has remained an obstinate part of the mind-set of many international NGOs both northern and southern.

39 **Review of non-governmental organisations working in urban slums,** (internal paper), WaterAid Kenya Office, December 1995.

Although more are now beginning to entertain the idea of working in urban areas – with street children and women's groups, for example – there is still inadequate recognition of the way in which environmental squalor forms an intrinsic part of urban ill-health and hardship. International NGOs should be encouraged to articulate policies towards the urban poor which embrace infrastructural issues, especially lack of water and sanitary amenities.

- **Information exchange and networking:** In the *Mega-Slums* report, WaterAid called for the establishment of a systematic inter-agency programme to collect and disseminate information about water and sanitation schemes which have given proof of workability, cost-effectiveness and customer satisfaction in low-income environments. Some effort has already been made in this direction by the Water and Sanitation Collaborative Council; more is needed. An international knowledge base about best practice – technological, financial, managerial, environmental – consistent with the principles of the new water and sanitation order is sorely needed.

- **Habitat II, the 'City Summit':** The entire international governmental and non-governmental community concerned with the human habitat should use the opportunity of the International Conference on Human Settlements in Istanbul to alert political and municipal leaders to the growing sanitary crisis. Better supplies of water and sanitary amenities are a critical part of the 'brown agenda', and should be given the attention they deserve.

In conclusion

Since World Water Day 1994, there have been some signs of progress towards the new sanitary revolution WaterAid then called for. These signs include: increasing awareness of the plight of the urban poor, and of the burden of ill-health they carry; some revision of underlying policies and practice by organisations concerned with water and sanitation services; some new partnerships between official and community bodies, often brokered by intermediary NGOs; more examples of good practice to show that the principles of the new water and sanitation order are sound.

But more, much more, drive and momentum is needed. Therefore on World Water Day 1996, WaterAid again calls upon friends, supporters, water industry colleagues and partner organisations in Britain and throughout the world to promote in whatever way possible the ideas and actions presented in this briefing note. If the necessary changes do not occur, the planet will start the millennium with upwards of one billion people living in the kind of urban squalor which produced the horror of the Surat plague epidemic. As that experience showed, failure to meet the challenge of the global sanitary crisis affects people everywhere.

This was the central message of the *Mega-Slums* report. It still holds true today.

This briefing note is a supplement to the 1994 WaterAid report by Maggie Black *Mega Slums: The coming sanitary crisis.* Thirsty Cities contains updated information and a review of progress on the agenda set out in the *Mega Slums* report