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**IRC SYMPOSIUM : SANITATION FOR THE URBAN POOR  
PARTNERSHIPS AND GOVERNANCE**

## **Sanitation Services for the Urban Poor: Symposium Background Paper**

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*This paper addresses sanitation for the urban poor from a service delivery perspective. This entails a shift from simply seeing interventions as capital projects towards a systems approach that considers all elements required to provide sustainable and appropriate sanitation services to the poor at scale. The paper argues that urban sanitation services should consider:*

- *The entire sanitation chain: confinement (the toilet seat and safe storage under the seat), removal and transportation of faecal sludge, subsequent treatment and disposal or re-use.*
- *The service delivery process: planning, construction, operation and maintenance, and subsequent renewal of service delivery elements.*
- *Both hardware and software elements, particularly hygienic behaviour.*

*The delivery of sanitation services to the poor does not take place in isolation but in a larger urban reality. Hence, this background paper examines the broader urban context as well as sanitation specific issues. Approaches that seek to isolate themselves from this urban reality will fail to scale up and at best remain islands of success in a sea of failure. The section on specific sanitation issues demonstrates that technological options, finance, partnerships, and governance are strongly interconnected, underlining the need for an interdisciplinary approach and dialogue.*

*This paper is central to the symposium – it is designed to draw together some of the key arguments from the main papers being presented and to provoke participants into a response. Two key questions have been formulated to help guide examination of the cases that are to be presented and discussed during the symposium:*

- *Is the approach or methodology well embedded in the urban environment, so having the potential to be scaled up?*
- *Whose shit is it, how is it dealt with it and who foots the bill?*

*These questions and the resulting issues are explained below.*

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## **Introduction**

### **Global urbanisation**

The global urban population is increasing rapidly and today, for the first time in human history, outnumbers the rural population. The number of urban dwellers is set to increase to 3.9 billion in 2015 out of a projected global population of 7.2<sup>1</sup> billion. Almost all of this urban growth is taking place in developing countries as the urbanisation process has largely run its course in the higher income countries of the world. Within the developing countries, urbanisation is mainly taking place through the rapid growth of small and medium-sized towns and small cities rather than the development of large numbers of new mega-cities. For instance, in India 75% of the urban population lives in cities with a population of less than one million inhabitants (Verhagen and Bhatt, 2004).

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<sup>1</sup> Source: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, World Population Prospects: The 2006 Revision - <http://esa.un.org/unup/> accessed on November 3, 2008

This rapid urbanisation is driven by a wide, complex and interlinked range of factors. Principal among these are::

- Pressure created by overall population growth and associated household size reductions,
- Increasing levels of rural poverty, which is, in turn, accentuated in many places by the apparent impacts of global climate change.
- Economic change processes including industrialisation in both rural and urban areas
- Prospects (real or perceived) of employment and better civic amenities in urban areas,

### **Urban sanitation – the quantitative problem**

The world is way off track in terms of meeting its Millennium Development Goal (MDG) obligations in respect of sanitation. It is estimated the MDG target of halving by 2015 the proportion of people without sustainable access to adequate sanitation will be missed by more than 700 million people. The most recent Joint Monitoring Programme estimates (UNICEF/WHO 2008) show that urban sanitation coverage had risen to 79% by 2006. However, while 779 million people in urban areas gained access to improved sanitation for the first time between 1990 and 2006, this huge number did not even keep pace with the 956 million increase in the urban population over the same period. The JMP estimates that 320 million urban dwellers in developing countries still did not have access in 2006 to improved sanitation. Almost by definition, the majority of these people belong to the urban poor and are living in slums, where the greatest increase in urbanisation is taking place.

The latest JMP report redefines access in terms of a sanitation ladder, differentiating between:

- Open defecation – indiscriminate defecation in fields, forests, other open spaces or disposal of faeces with other solid wastes.
- Unimproved – where there is some containment of faeces but not in a way that separates excreta from human contact.
- Shared facilities – a new distinction in the current JMP report - including private toilets shared (e.g. between families) and public toilets.
- Improved sanitation facilities - there has been no change in the previous definition - a sanitation facility is considered adequate if it hygienically separates human excreta from human contact. Improved facilities are more likely to ensure privacy and hygienic use.

Though the JMP has been accepted as an international yardstick towards the attainment of Target 10 of the MDGs, it is often felt that it underestimates the challenge that is posed by delivering urban sanitation services to the poor. As Allen and Hofmann (2008) point out improved sanitation is not the same as adequate sanitation. They are not the only ones to question the figures. “This figure (for the urban unserved) is reckoned to be an underestimate by today’s leading authorities on slum and squatter settlements, who believe that the invisibility of the poorest and most deprived urban populations in data collection obscures the fact that residents in the worst living environments have nothing resembling adequate sanitation”(Black and Fawcett 2008). UN-HABITAT estimates that about 50% of the urban population lacks adequate sanitation services. This implies that the number of people who still need gain access is four to five time higher than that suggested by official statistics (UN-Habitat 2003 referred in Sijbesma *et al* 2008).

A second point is that the MDG definition counts the number of ‘improved seats’ but ignores wider environmental issues. Malfunctioning treatment plants, absent or leaking sewerage systems, and overflowing septic tanks pose a threat to the quality of the urban environment. It is estimated that 90% of urban wastewater in developing countries remains uncollected (Allen and Hofmann 2008). In many cases, the urban poor live in places that are most polluted (Baken 2000). The sanitation problem extends well beyond consideration of the point of defecation, and this is especially true for poor urban areas. (Sijbesma *et al* 2008)

The poor are especially affected by inadequate and substandard sanitation services and these effects are not only limited to the health impact resulting from daily exposure to polluted habitats. Many of the poor, women and girls in particular, are forced to divert time and energy in search of a private place to relieve themselves. Often they can find such places only before dawn or after dusk which brings the risk of sexual assaults. Women reduce their food and fluid intake during the day which can result in kidney stones and urinary tract infections. Poor people are forced to pay in price for sanitation in terms of loss of time, dignity, and health (Sijbesma *et al* 2008).

### **Box 1 : Key definitions**

The title of the symposium is “Sanitation for the Urban Poor: Partnerships and Governance”. None of these key words are unambiguous. This section provides definitions adopted for this symposium.

#### **Sanitation**

Sanitation is defined as the means necessary to dispose of human excreta and waste water safely. Sanitation includes a mix of hardware and software measures covering confinement (a safe toilet), removal and transportation, and treatment, referred to collectively as the “sanitation chain”.

#### **Sustainability**

The Sustainable Sanitation Alliance has adopted the following definition: in order to be sustainable, a sanitation system has to be not only economically viable, socially acceptable, and technically and institutionally appropriate, it should also protect the environment and the natural resources. Sustainability criteria include but are not limited to health and hygiene, environment and natural resources, technology and operation, financial and economic issues, social-cultural and institutional aspects, human dignity, quality of life and environmental security. (SuSanA).

#### **Urban**

There is no universal definition of urban, nor need there be. National definitions are based on one or a mix of the following characteristics: population size, population densities, administrative boundaries, presence of typical urban services, etc. This symposium defines urban as areas that meet typical urban characteristics while acknowledging that ‘typical urban characteristics’ are context specific. It should be noted that administrative boundaries do not necessarily coincide with this definition.

#### **(Urban) Poverty**

The symposium follows a definition of poverty based on underlying social exclusion: the urban poor are groups who are not able to gain access to basic amenities (including adequate sanitation), due to a combination of where they live, what they possess, who they are, and what they know. The chronic urban poor find themselves in a permanent state of social exclusion whilst the transitory poor move in and out of a state of social exclusion (Nelson et al, 2008).

#### **Slums**

There are many synonyms for the places where the urban poor live: slums, squatter settlements, barrios, ghettos, informal settlements, bastis, favelas, shanty towns, peri-urban areas. This symposium uses slums and defines them as densely populated urban areas that are the living areas, and often the working places, for the poor and very poor, that have poor level services, and have mostly a (semi)-illegal character<sup>2</sup>.

## **Sanitation for the urban poor**

### **The divides: water vs. sanitation and rural vs. urban**

In many sector debates, no clear distinction is made between water and sanitation or between rural and urban areas. Often sanitation is assumed by default to be included with water as in the debates on privatisation (Allen and Hofmann 2008; Eales 2008). However, urban areas – irrespective of their size – are not simply very densely populated rural areas. Urban areas are distinctly different in a number of ways, such as: the large number of people living in rented accommodation, the relative proximity of government, the monetary character of the urban economy, the scarcity of land, the large fluctuating migrant populations, the cultural diversity, etc. All these contextual factors pose their specific challenges to delivery of urban sanitation services to the poor. . Moreover, urban sanitation is not simply the flip side of urban water supply (Eales 2008).

Some of the defining differences between urban sanitation and rural sanitation and urban water supply are:

- In rural sanitation, the key issue is one of stimulating demand and promoting hygiene awareness. The former is seldom an issue for the urban poor who have an articulated demand for access to adequate sanitation. However, sustainable urban sanitation does require large-scale personal behaviour change in terms of proper use, hand washing, maintenance, etc.

<sup>2</sup> It is recognised that slums show many different characteristics. For instance, in Mumbai (India) a combination of disproportionate property prices and traffic congestion drive middle class families into some of the informal settlement. Other slums are the home of some of the poorest of the poor. For a typology of slums in India city refer to Baken 2000

- While rural sanitation programmes can focus on behaviour change and motivating users to invest in a basic toilet, urban improvement programmes need to go far further. They must pay attention to what happens next. What happens when the pit, septic tank or conservancy tank is full? How and where is the waste disposed of? What roles must be addressed to make the service work and who should perform them? (Holden 2008). There are significant financing implications, because individual household investment in hardware that might suffice for rural sanitation, must be supplemented by investments in supra-community infrastructure<sup>3</sup> by urban authorities.
- Urban sanitation is not the inverse of water supply (distribution from a central treatment facility through a decentralised networks). Sanitation requires that waste is collected and transported from one central point to another. Many stakeholders are involved in this sanitation delivery chain. Even more than in the case of water pipes, a leaking sewerage network will cause serious health risks. Moreover, sustainable sanitation requires a change of personal behaviour; a service that cannot be ‘delivered’ (Eales 2008). Effective urban sanitation requires integrated thinking across a range of areas: excreta management, drainage, management and transport of wastewater (and, ideally, storm water), solid waste management, hygiene behaviour, public and environmental health management, innovative financing, and so on. (Holden 2008)
- The negative impacts of inadequate urban sanitation are mostly felt downstream – i.e. pollution from faeces starts in one place and the effects are felt by other people in another place. In the absence of linkages between polluters and affected populations – as Community Led Total Sanitation (CLTS) seeks to establish – the motivation to contribute to the costs of adequate sanitation services remains weak.
- Urban sanitation has to deal with high densities. Whilst on-site disposal is still feasible in low density areas and the urban fringe, in many areas off-site disposal is the only feasible option for the entire range of technological options. This requires that faecal sludge is transported out of the urban communities and treated, recycled or disposed elsewhere.

Finally, the debate on urban sanitation seems to be less advanced compared with that around rural WASH and urban water supply. The failures of the 1980s, during the International Decade of Water and Sanitation, set off an intense debate about why hardware – water points and toilets – sooner or later invariably seemed to fail. The debate has resulted in a better understanding of the building blocks of going to scale, certainly in rural water supply. On similar lines, there has been a heated – and often dogmatic – debate around the ability or inability of the private sector to provide water to entire urban population. Although this debate has not finally been concluded, it appears to have brought a better understanding of the economics, necessary institutional and regulatory structures, and choices for successful water supply provision in urban areas.

Similar debates have only just started within the sanitation sector, although there has been progress in for example, acceptance of the need for hygiene promotion and the concept of becoming free from open defecation as one of the outcomes of Community Led Total Sanitation (CLTS). Indeed, many see hygiene awareness processes that result in Open Defecation Free (ODF) communities as the way forward for rural sanitation.

But the picture for urban sanitation appears bleaker. Here too there have been successes - the Orangi Pilot Project in Karachi (Pakistan) shows that community orientated planning and the adoption of appropriate urban technologies can yield significant successes (Sijbesma *et al*, 2008). Likewise, the slum mapping and enumeration work pioneered in Indian cities can act as the precursor of large-scale improvements in sanitation facilities, especially when they are community (as against local authority) managed. And, some technological improvements have been made – witness for example, the floating, tethered septic tanks in the ponds of Dhaka, providing of-site storage for waste from the hanging toilets which they have improved.

However, it appears that this progress is piecemeal, usually locally generated, rarely scaled up and, in any event, confined to a part of the urban sanitation chain. For instance, a project in Quetta (Pakistan) successfully tested condominium sewerage to provide sanitation services to the urban poor. However, in absence of well functioning sewerage network and treatment facilities, faecal sludge is being dumped in ravines in the vicinity of the city (Qutub, S *et al*. 2008).

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<sup>3</sup> It is recognised that eco-sanitation seeks to close the loop as close to the household as possible. However, it remains questionable whether it is feasible to close the loop in densely populated urban slums, in which case urine, grey water, and human faeces need to be separated and transported safely out of the slum. For further discussion refer to Richard Holden 2008 (<http://www.irc.nl/page/44100>)

Summarising, there is a need to take an all encompassing view towards urban sanitation by addressing all elements of the sanitation chain; that is, confinement, removal and transport, and disposal. The field of urban sanitation is complex and poses enormous challenges. The key challenge – to provide sustainable and affordable sanitary services at scale and dispose safely of the faecal sludge from low-income areas with densities as high as 200,000 people per square kilometre –has never been solved so far. This is further compounded by the failure to maintain services for those who have already been reached. To use the metaphor of the sanitation ladder – we are not helping enough people onto the lower rungs of the ladder and we are failing to prevent people on the ladder from dropping off.

### **Sanitation and hygiene service delivery<sup>4</sup>**

An appropriate and sustainable service for the urban poor would be safe and easy to use and would not lead to further deterioration in the urban environment. As with most complex problems, the failure to provide such services has many tangled roots. To provide sustainable and affordable sanitation services to the urban poor a number of factors have to be in place and working together, irrespective of the technology:

- Policy and political factors to create the environment to move forward.
- Knowledge factors to enable appropriate questions to be asked and decisions to be made.
- ‘Soft’ factors such as skills, hygienic behaviour, norms and practices.
- ‘Hard’ factors such as suitable technologies.
- Financial factors such as availability of finance for capital expenditure, ability/willingness of users to pay for services.

For a service to work all of the above have to be in place. Where one or more are missing, the service is impaired or fails completely. With few honourable exceptions, there appears never to have been a comprehensive approach to planning and maintaining urban sanitation systems that has looked at these factors in combination.

In any event, in informal settlements, when it comes to sanitation, residents have by and large been left to fend for themselves. An individual household will take a decision to construct a toilet for its own use (perhaps shared with neighbours). What happens downstream in terms of impact on water supply, or in terms of when the pit is filled, is not a central consideration, at least not to start with. Where communities have come together, this has generally been because all other avenues of progress have failed. Where “comprehensive” sanitation interventions have been attempted, it has usually been axiomatic that sanitation is equated with a water based technology. The approach comes to be dominated by the provision of a technical system – and so the mechanism to achieve it is the “project”.

We are suggesting that the emphasis should move to a service delivery approach. But what is a sanitation service? How might such an approach differ from other approaches; particularly from what is generally referred to as a ‘project based’ approach? Why do we believe that a service based approach is preferable to a project based approach?

A service delivery approach focuses on the service itself, understood in terms of quantity, quality, reliability and accessibility as the main objective of sanitation (and hygiene) interventions<sup>5</sup>. This contrasts with a project based approach which typically looks at sanitation delivery systems. Two key aspects of the service delivery approach are scale and sustainability.

To be worthy of the name a service should aim to meet, and continue to meet, its design parameters indefinitely. Individual elements of the service may need maintenance or repair – but the service itself should be continuous. At its simplest, a sanitation service can be best understood in terms of a user’s ability to reliably access safe and convenient toilets, including excreta disposal, constantly and indefinitely. Hygiene related services can be understood in terms of maintaining positive behaviour change. The crucial point is the focus on what is being achieved, rather than the means to supply it.

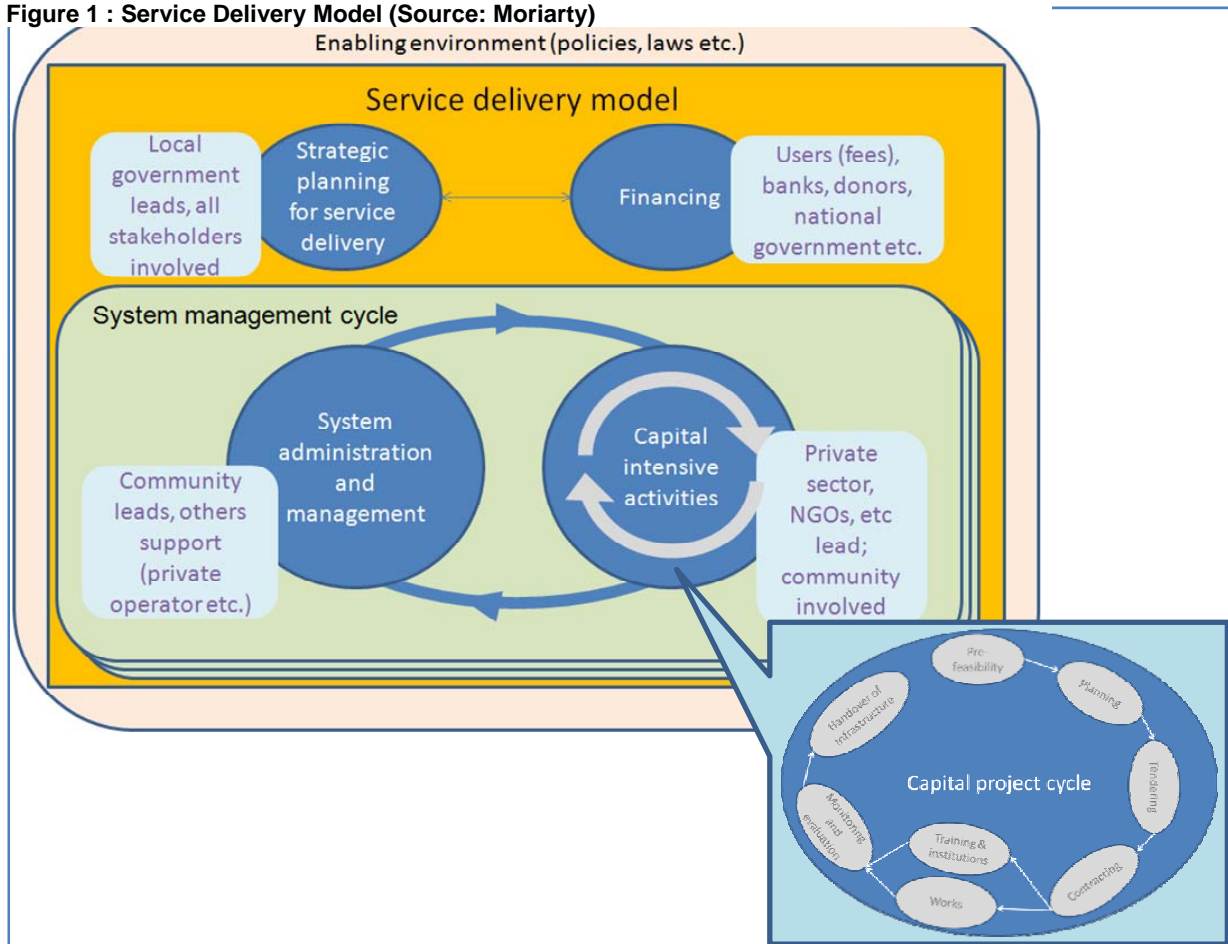
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<sup>4</sup> The starting point for this section was a paper within the WASHCost project by Patrick Moriarty of IRC on service delivery approaches. His input is gratefully acknowledged.

<sup>5</sup> In sanitation there is a further parameter to consider, which arises from the public health premise that, until all members of a community engage in hygienic behaviour and use appropriate sanitation facilities, then all members are at risk. On that basis, eradication of open defecation becomes a critical element of service delivery.

Services are provided by delivery systems. These contain both hardware and software. For sanitation, the hardware includes VIP latrines, vacu-tugs and treatment plans, while the software includes hygiene education and the skills of the environmental health technicians. In some situations the system and the service may seem to be almost the same thing: certain types of ecosan may be a case in point. In most others– household sewerage for example – they clearly are not the same. However, even in the simplest of situations there are actually multiple elements necessary to make the system work effectively to provide a service: technicians; spare-parts suppliers; committees, user knowledge and commitment etc.

**Figure 1 : Service Delivery Model (Source: Moriarty)**



Combining the concepts of sustainability and scale it is possible to see that a sustainable scaled up sanitation and hygiene service delivery involves many different subsystems, each with its own life-cycle. Different phases of the cycle implicate different actors in service. By considering a larger unit of service provision, it becomes (at least in theory) possible to achieve synergy and cost effectiveness in providing support services to individual systems.

Service delivery at scale is also about governance and decision making: who gets what, when and for what tariff. It is about tackling coverage: ensuring some for all. Ideally, the functions of governance should be separated from the functions of provision (constructing and managing systems). This is because governance requires the ability to monitor, criticise and change, based on whether the users are getting what they want and need. When the governor of the system is also the provider, it makes it much harder to be sensitive to failures in the system.

Providing a service to an entire population implies dealing with many different systems within a service area. Each of these will have its own cycle of capital intensive and management intensive periods. This is illustrated in Figure 1, which helps to illustrate the concept of a *service delivery model*, by which we mean the totality of means necessary to deliver a given level or type of service.

In Figure 1, the service delivery model for a given service area (for example a number of community sanitation blocks linked to mains sewers) is nested within an enabling environment of policy and legislation. The service delivery model incorporates strategic planning and financing for the service areas, as well as a number of system

management cycles (i.e. a management cycle for the sewerage system and the treatment plant). The service delivery model therefore incorporates *all* the elements necessary to provide a certain level of service within a defined service delivery area.

Equally, the nature of providing sustainable services implies the need to work at different scales – from the individual or household, through the community, to the intermediate and national. Each level has different roles in ensuring and protecting sustainable services and only when *all* elements are in place and working together will sustainable service delivery actually be achieved. To make a simple analogy, at household level, if one member of the family does not use the toilet properly and does not clean up, then all members of the family suffer. At community level if one family defecates in the open, all families are at risk. And so on up the scale. However when looking at an entire system, while all levels are important, the ‘intermediate’ level is likely to be the key level of sanitation service provision: national bodies do not implement service delivery at district level, and we know that communities cannot<sup>6</sup>. The important point is that the unit must be of a sufficiently large scale to contain all the main elements for sustainable sanitation and hygiene service delivery: hygiene promotion, planning and design, spare parts supplies, technical backstopping and so on.

It is possible in broad brush terms to set out the main differences between a service delivery and a traditional project based approach. This is attempted in a highly summarised form in the table below.

**Table 1 : Service delivery approach versus project approach**

Element	Service delivery approach	Project approach
Planning	Seeks to plan and prioritise investment and activity on the basis of the needs of the entire population of the district or town	Generally ad hoc (planned and implemented by individual households) or technical projects – leading to an inappropriate, unsustainable technology choice – so expensive as to be limiting in extent for resource reasons.
Sanitation Chain	All elements of the chain necessarily need to be included for the approach to be considered successful.	For both household and sewerage system facilities, the chain is a secondary consideration; latrines are not emptied, treatment systems are not present, or fail.
Maintenance	Sees individual, communal or area wide ‘systems’ as parts of mechanisms for service delivery. Accepts that systems have a life cycle that requires different management interventions at different phases	The construction of systems is the main focus. Thinks in terms of ‘construction’ and ‘post construction’. The latter is typically a secondary consideration, and where sewerage is considered to be the “system” of choice then chronic shortfalls in resources leads rapidly to complete system failure.
Coordination	Seeks to coordinate all actors within an area under an overarching strategy, which includes commonly agreed model(s) for different types of service	Different actors do their own thing using different types of system and different intervention logics.
Resources and efficiency	Aims to optimise resource use, and achieve high levels of sustainability and reliability	Overlap is common – synergy seldom achieved. Sustainability a recurrent and well documented problem.
Outcome – separation of humans from harmful excreta?	Achievable	Not consistently achievable

Each different service type (from pit latrines to sewer connections) contains within it a host of implicit and often unaddressed assumptions about support services, financial requirements, ability and willingness to pay, technical capacity, spare parts and so on. The heart of the service delivery approach, and why this is important to future deliberations in the sector, lies in making these implicit assumptions explicit. Failure, first to consider, and secondly, to deal with these implicit assumptions, lies behind much of the current failure in urban sanitation.

<sup>6</sup> The much quoted example of the construction of community sanitation blocks (in Pune and other cities) might have the reader think that this is not so, but in fact this is a case in point: the community’s role in developing and maintaining such facilities was an important, necessary but ultimately contributory element. The NGO and community are in partnership with the city government. (See Allen and Hofmann 2008)



### **Box 2 : Great Stink London**

It is well known, and often quoted, that urban sewerage systems were in use in Roman times and earlier civilisations. Water closets have been a feature of urban homes since the 17th century in increasing numbers. However, the discovery of the linkage between cholera outbreaks and water quality deficiencies by Dr John Snow in the 1850s provided an impetus to the construction of city-wide sewerage systems. It is interesting that the important linkage between poor sanitation and disease (life expectancy for a working person in England at that time did not even stretch into their thirties) was not established by Snow. The serious water quality issue that he spotted was only later identified as being attributable to the fact that the urban dweller was effectively drinking diluted sewage on a daily basis. This is not semantics; it highlights an issue which still prevails: the erroneous attribution of excessive mortality to a problem with 'water' – which is a medium of transmission (albeit a most efficient one), whereas in reality the source of the problem is sanitation. To this day, sector professionals still talk about waterborne diseases with the assumption that the way forward is a water related issue, when actually sanitation and hygiene improvements are the necessary response.

In any event, the "Great Stink" from the River Thames, effectively an open sewer at that time, precipitated British parliamentarians to demand action, leading to the construction of London's sewers (and associated treatment plants) during the 1860s. This rush to sewerage was a result of the mistaken belief that diseases were spread through 'miasma', i.e. the smell of sewage indicated that disease was being transmitted through the air.

It is important to note a two step process, the first being the adoption of toilets, the second being the other elements of the sanitation chain. The purchase of sanitary hardware (toilets) was undertaken by the private citizen, but the capital costs of the removal (sewerage) and treatment element were publicly provided. Up to this point, household faecal material merely ended up in cesspools and there was a huge industry of what is today known as "manual scavenging", then referred to as "nightsoil removal". It was the removal of faecal matter from the public environment which triggered the massive public health gains of the late 19th century, as life expectancy increased dramatically in all urban areas.

This box is based on material from Black and Fawcett, *The Last Taboo* (2008) and from Holden, *Urban Sanitation Technologies: The Challenges of Reaching the Urban Poor* (2008)

## **Delivering sustainable sanitation services to the urban poor at scale – the larger issues**

### **Governance in general**

Governance is the process by which decisions are made and implemented<sup>7</sup>. It can be seen as the interactions, relationships and networks between the different sectors and involves decisions, negotiation, and different power relations between stakeholders to determine who gets what, when and how.

Governance operates at different levels, from the international level to households in communities. The relationships between government and different sectors of society determine how things are done, and how services are provided. Governance is therefore much more than government, as it shapes the way a service or set of services are planned, managed and regulated within a set of political social and economic systems to ensure sustainable services.

Many stakeholders are (or should be) involved; ideally all those with a legitimate interest in the outcome of the decision-making process, including governmental organisations, service providers, capacity building organisations, contributors of finance, the users of services and organisations that support them. Governance emerges from the formal and informal relationships that exist between people, institutions and government.

In the sanitation sector at national level, stakeholders include the national departments of water, local government, health, education, international donors, national and international NGOs, finance institutions, local government associations, national skills training institutions, research institutes, educational bodies, etc. At the local level, stakeholders include local government (councillors and officials), community based organisations, NGOs, services

<sup>7</sup> This is edited text from Strengthening local governance for improved water and sanitation services; Jean de la Harpe, IRC 2008



providers including outreach workers, community representatives, local associations, and possibly traditional leaders. Not least, stakeholders at local level include users of services.

People require sanitation and hygiene services that are sustainable, in which stakeholders, including the most vulnerable in society, have a say in key decisions and where access to the services is equitable and fair. This requires good governance. The value (“good”) lies in constructive co-operation between the different sectors where the result is efficient use of resources, responsible use of power, and effective and sustainable service provision. Good governance can only emerge when stakeholders engage and participate with each other in an inclusive, transparent and accountable manner to accomplish better services free of corruption and abuse, and within the rule of law. Although good governance may be difficult to put into practice in some locations, and this especially includes informal urban settlements, it is important to work towards good or ‘good enough’ governance, in order to achieve sustainable services.

Good governance ensures that all stakeholders, including the poor and disadvantaged have an opportunity to influence development decisions that affect their lives, to contribute to development, and to share the benefits and improve their livelihoods. The result of good governance is access to basic services on a sustainable basis. It can take years to achieve good governance, because different stakeholders and groups in society need to negotiate how things are done and how resources are allocated. What works in one country (or locations within it) may not work in another location/country. Countries need to create their own good governance frameworks, through locally led participatory processes.

### **The political reality of the urban poor**

The call for improved governance is central to this background paper, as are key questions about how to achieve it: We can also ask, What makes it so difficult to improve governance? Who stands to gain from inadequate governance? How and why are attempts to improve governance being resisted? It is important to appreciate that providing urban sanitation services to the urban poor generates a number of governance-related problems that are not directly related to sanitation in particular but to the urban environment in general. In other words, providing water services, health care services, education, adequate housing, etc. are all equally reliant on good-enough governance. .

There are a number of factors specific to urban areas such as lack of security of tenure, culture of poverty, lack of a sense of belonging or community, large floating populations, the predominantly monetary character of the urban economy, high land prices, a culture of impunity that accompanies non provision for the poor, and proximity and tighter control of government. However, this section will start with a closer look at the service delivery mechanisms on which the urban poor rely.

### **Urban service delivery in practice**

*This section draws upon the essay that was authored for the symposium by Robert-Jan Baken, The political and administrative context of slum improvement*

Thinking about the slums and the urban poor has changed profoundly over the past five decades, as described in Baken 2008. In the 1950s and 1960s slums at the edge of cities were regarded as a shameful but temporary presence that would disappear with economic development. In the 1970s and 1980s, when slum clearances had failed, there was a move towards supporting self-help groups and ‘sites-and-services’ projects which encouraged families to move to planned areas of housing and to contribute in cash or labour towards building and services. In the market driven 1990s it was assumed that a combination of privatisation and self-improvement would upgrade the slums. In the current decade, it has become clear that a proactive policy to prevent slum formation is unrealistic. Currently most rapidly growing cities in developing countries seem to adopt a laissez-faire attitude that relies on slum formation as the main mechanism to deliver housing to the urban poor. (Baken 2008).

The reality of the service delivery to the urban poor consists of a cocktail of an administrative muddle and political dealing carried out against a chaotic, often violent “enforcement” backdrop. While sensible and appropriate policies to confront slum conditions may exist on paper, their translation into practice is often marred by corruption and by the fact that those who are suppose to deliver services face no penalties if they fail to do so. On the one hand, slum dwellers are ‘illegals’ and not entitled to a full range of services. On the other hand, the main delivery mechanism for housing is the illegal land brokers who buy land and subdivide it, and who enjoy the protection and collaboration of urban administrators and local politicians. Similarly, illegal invasions only succeed through the

protection of the same groups. Votes, favourable job postings and bribes are the oil that keeps this delivery chain running. (Baken 2000)

Similarly, the provision of infrastructure for the poor is often a matter of patronage – a sanitary block or water point often turns out to be an award for services or votes rendered, rather than in response to a shared view of what constitutes the rights of inhabitants. Those who try to provide services on the basis of need are vulnerable to attack as they are seen as undermining the prevailing structures and reward systems. Baken describes how all new slum dwellers are expected to align themselves with a political party, and the price for refusal can be extreme violence. Such an alignment places new inhabitants in a structure through which their needs might be met, and protection offered, but only if they play the game and provide the requisite contributions.

Baken describes the situation for the urban poor as being a complex and ever-shifting patronage web of local politicians, local administrators and slum leaders. Every slum and slum pocket has a leader who serves as the go-between between the urban poor and local administration. There are often strong links between slum leaders, local administration, and local politicians. This basically means that planning of infrastructure is not a rational process but a political process.

In some cases, slum leaders are quasi social workers; in other cases they are violent thugs. However, the uneasy relationship between the urban poor and their slum leaders is mostly characterised by distrust and deceit as most slum leaders seek to gain personal benefit from their leadership role. In this hierarchy, roles and responsibilities are well understood. In many locations it is the role of the government official to grant favours to slum dwellers, who have to be submissive to the point of begging. This is a comprehensively unequal relationship, riddled with political rivalries and factions. Many processes of slum clearance result from an upsurge in political conflict rather than the enforcement of planning and building regulations, that may be cited as the motivation.

Few people know their way around the urban administrative system. In many cases, bye-laws, regulations, laws are outdated, contradictory, mandates are overlapping or totally absent and communication between different department conspicuously absent.

Urban service delivery is further hampered by weak social cohesion, the lack of security of tenure and the high percentage of people in rented accommodation. This combination of factors becomes one of the main stumbling blocks for service delivery to the urban poor. Urban authorities often perceive delivery of services and investments in infrastructure as de facto recognition of the slum. For their part, slum dwellers are hesitant to invest in the improvement of their habitat without having secure tenure and under conditions where every improvement may raise their rents.

So, could the community unite to get what is their right? It is common to use the word community as if urban society is harmonious and homogeneous – it goes without saying this is rarely the case. Real participation would undermine the “system” but although participation is often quoted in programmes, and there are examples where this has happened, lack of social cohesion is the norm. For instance, in Old Fadama in Accra (a slum with a strong social capital and a fairly stable population) residents indicate that when their huts collapse they have to sleep on the same plot and rebuild it within a few hours as otherwise their place will be taken by someone else.<sup>8</sup> Other slums have a large floating population consisting of temporary migrants in search of work.

A service delivery approach needs to take into account these realities to be able to deliver sanitation services to the urban poor. The symposium needs to examine whether the cases we examine engage with the urban reality in their countries, or seek to isolate themselves from it and create islands of success.

## **Delivering sustainable sanitation services to the urban poor –sanitation related issues**

### **Technological options**

SIDA (1998:<sup>2</sup> quoted in Holden 2008) estimates that an average person produces 50 litres of (dry) faeces and 400-500 litres of urine annually. The amount of grey-water<sup>9</sup> generated varies enormously (from 4,500 to 73,000

<sup>8</sup> Personal communication with residents of Old Fadama (Verhagen 2008)

<sup>9</sup> Grey water is the waste water that is produced from cooking, washing, etc.

litres) and is dependent on the availability of supply and how close to the final point of use it is brought. Even small amounts of faeces pose a significant threat to health. Whatever the density of the settlement, urine, faeces, and grey water have to be disposed of in a safe and sustainable manner and the denser the settlement, the more problematic it becomes to do this safely.

On-site disposal is common in rural areas and applicable in less dense or small urban settlements. However, in dense or large urban settlements urine, grey water, and faeces need to be transported out of the area and safely disposed off elsewhere. The point of cross-over from on-site to off-site disposal depends on local conditions but generally happens when households have no room to dig a second pit or no pit at all. Off-site disposal has been a challenge ever since humans started living in cities, as it requires that:

- A collection, transport, and treatment system is put in place and maintained so as to ensure that faecal sludge is transported and disposed of safely
- Collective finance mechanisms are implemented - in most cases this necessitates a system to invoice for and collect user charges
- Regulations are developed and enforced to ensure that the system is not abused.

However, service delivery mechanisms are very context specific. For instance, water-borne sewerage, one of the few technological options that has been successfully used at scale (and at high cost), is adapted to the local circumstances such as the availability of water, the appealing nature of ‘flush and forget’, and the poor economics of reuse technologies available in the 19<sup>th</sup> century (Black and Fawcett 2008 Page 22 et seq). However, the scale of capital and operating costs and the need for a reliable and continuous water supply put this option out of reach for a very large majority of the urban poor.

So, there is a large question mark over what technology might be appropriate and affordable. There are design requirements at all levels. Hand washing facilities (water and soap or ash) are needed in the proximity of the toilet to maximise the health benefits of sanitation. Furthermore, the design of the toilets needs to ensure privacy, so that people, especially women, are not prey to violence and assault. Facilities also need to be usable by children, by people with mobility impairments and disabilities; and the menstrual management requirements of adolescent girls and women need to be provided for. These design parameters tend to be overlooked by male engineers

### **Box 3 : Ecological sanitation (ecosan)**

The nutrient qualities of human excrement have been long appreciated. In some quarters, that appreciation is being rekindled, in others it never died while in some it may never exist.

The “nightsoil” removal from Victorian London fed the agricultural fields around the city and the construction of sewers led to an outcry about the loss of fertiliser. One German academic estimated that Victorian sewer systems in England “results in a loss annually of the materials capable of producing food for three and a half million people”<sup>10</sup>. The problem encountered with large scale attempts to extract nightsoil and use it for agriculture is that, in the end, the economics did not stand up. In some developing countries, the latter day incarnation, now rebranded as part of ecosan, has made gains in many rural areas. In some places, notably in rural China, it never disappeared.

The reasons for this increase and its many adherents in rural areas arise from such considerations as increased cost of fertilizer, increasing amounts of poverty including that stemming from climate change impacts, and a general increase in awareness of the possibilities of losing the loop and increasing revenue for poor families. In an urban context the uncertainties remain as they did two centuries ago, being principally that the cost of removal of high volumes of untreated effluent make dubious economics. However, IRC’s Source Bulletin reported in July 2008 that a public toilet has been opened in the city of Musiri, Tamil Nadu, and customers will be paid for their deposits into the ecosan toilet<sup>11</sup>. Although this was a contribution to a research project, this development may be at least a portent for the future. As water resources become more scarce, willingness to adopt of waterborne sewerage will further decrease and more attention will be paid to the transport of faeces through other methods. A combination of the need to avoid putting sludge in the water and the potential for reuse may combine to revive interest in ecosan type approaches.

<sup>10</sup> Professor Justus von Liebig, of Giessen University, quoted on Page 23 of Black & Fawcett.

<sup>11</sup> Source Bulletin, accessed from <http://www.irc.nl/page/42564>, September 2008

At community and higher levels there are a number of parameters that need to be taken into account. Effective urban sanitation requires integrated thinking across a range of areas: excreta management, drainage, management and transport of wastewater (and, ideally, storm water), solid waste management, hygiene behaviour, public and environmental health management, innovative financing, and so on. Factors that need to be considered include:

- The ability to separate grey water, urine, and faeces successfully as this greatly reduces the volume of harmful waste that needs to be handled and eases the recycling of grey-water and urine.
- The density of settlements – in dense settlements digging a second (or even a first) pit is impossible and pits need to be emptied when they fill up. Pit emptying is often problematic for various reasons and exposes labourers to serious health risk. Moreover, in most cases the sludge remains untreated as capacity is limited and there are usually no agreements between small-scale service providers and the treatment utilities. Moreover, the denser the settlement the greater amount of sludge and waste water and the less room for on-site disposal. In such cases, a storm water drainage network is needed for the waste water.
- Many poor urban settlements are in areas unsuitable for the construction of pits for instance, on unstable soil, flood prone areas, or on steep hills. These factors also influence the potential to dispose of grey-water on-site.
- Governance of sustainable urban sanitation requires the integration of complex services (water supply, collection, transportation, and treatment) and collaboration between users, regulators, and service providers. This has proven problematic in many instances and might be one of the stumbling blocks for ecological sanitation in cases where on-site treatment is not possible. As Holden points out in his paper for this symposium, it seems unrealistic to expect that governments that have been unable to provide conventional services will be able to deal with the more complex requirements of cartage and treatment (or eco-sanitation).

#### **Box 4 : Sanitation for small towns**

Small towns account for a growing proportion of the growing world population and incorporate an increasing proportion of the total of those who remains unserved by water and sanitation. They lie somewhere between large urban centres and rural communities, the definition within this continuum is very much context based. While service delivery at either end of the continuum has elements that might be considered as norms, these are yet to emerge for the intermediate range – the small towns. There are particular issues which arise in such locations.

Often administrative centres and/or market towns, these locations “are sufficiently large and dense to benefit from the economies of scale offered by piped systems but too small and dispersed to be efficiently managed by a conventional water utility. They require formal management arrangements, a legal basis for ownership and management, and the ability to expand to meet growing demand for water”<sup>12</sup>.

One might add that they are too large for a community managed system (similar to a rural water supply). Such systems community managed systems often fail owing to lack of an institutional support mechanism – something that would be particularly necessary in the case of a small town system.

However, they are too small to have their own specialist operation and management set up. They “can’t go it alone and need specialised professional support in particular to train operators and to prepare and update business plans, expansion programs and efficiency strategies”<sup>13</sup>.

There is also felt to be an issue of political will. A large number of small towns with poor water and sanitation may be politically less visible than a small number of very large cities. So, with a limited cache of finance, time, energy and willpower, politicians and service providers turn their attentions elsewhere and residents of small towns lose out to their counterparts in the cities.

<sup>12</sup> Summary report on the small towns water and sanitation electronic conference Page 3; Jan- Mar 2000 Water and Sanitation Program.

<sup>13</sup> *Conference Statement* of the Addis Ababa Small Towns Water Supply and Sanitation Conference, June 2002

### **Governance arrangements for sanitation**

*This section draws on the essay authored by Adriana Allen and Pascale Hofmann for this symposium, “Moving down the ladder: Governance and sanitation that works for the urban poor”*

Whose shit is it? What do we mean by this question? Clearly not, literally, ‘whose bodies did this come from?’ The question is deeper than that. It means, who is going to take responsibility for this shit? Who cares enough to stop the city and its peri-urban borders festering and blighting the lives of all who live there? To put it another way – whose city is this? This question captures the essence of the governance-related issues around the delivery of urban sanitation services to the poor. It goes beyond a technical question to the heart of what it means to be part of city governance – either formally as part of its government, or as part of civil society, community groups, NGOs, private sector, donors, law makers, regulatory bodies and the rest. Not only do different parts of the chain need to be well governed; different parts of the chain need interfaces in between to ensure a well-functioning delivery chain. If ‘taking responsibility’ requires a lead from the city authorities, where within the authority will responsibility lie? Urban authorities are often hopelessly fragmented, and responsibility falls between water departments, sewage departments, public works and public health. One body needs to be made responsible and accountable, even if all these different actors have a role in governance.

For more than two decades a largely ideological debate has continued around delivery by private sector versus public sector. At its most simple, this debate is largely about two methods of failure: the private sector will not provide for the poor, as there is no profit to be made from them; the public sector lacks the capacity, finances and commitment to do so. Most of the debate has taken place around urban water drinking water supply; sanitation was included by association without consideration of the differences between these sectors. One could argue that neither the private nor the public sector route has ever received realistic levels of funds or the right sort of critical political support to make the best of their efforts. However, the private versus public debate has died down as the results of private sector involvement in the drinking water supply sector have been so chequered and widespread service provision for the poor has not materialised.

This private versus public debate largely ignored the pressing issue of whether the urban poor were being provided with affordable and appropriate urban sanitation services. Due to the failure of formal private and public sector, many of the poor had come to rely on self-service and small-scale informal service providers. Most of these service delivery mechanisms are needs driven rather than supply driven. The ‘sanitation wheel’ (Figure 22) that is introduced by Allen et al (2008) provides a useful tool for further analysis of sanitation delivery mechanisms, although it should be noted that strategies cannot be as cleanly categorised as suggested in the illustration.

- The left side of the wheel corresponds with the formal delivery mechanisms that are policy driven. The right side of the wheel depicts the highly localised coping strategies adopted by the urban poor, most of which are needs driven.
- The wheel shows the three sectors that are involved in the delivery of sanitation services: public sector, private sector, and civic society (including communities). However it is important to note that these sectors are not homogenous and that the composition of these sectors shows large differences between different places. The next section will further elaborate the partnerships between formal and informal service providers.
- The urban poor mainly depend on services delivery mechanisms that are found at the right side of the wheel as most formal delivery mechanisms are out of reach of the urban poor. Instead the poor depend on the following five delivery mechanisms: (a) self-provision through collective action; (b) direct social provision through state agencies; (c) direct social provision through non-state agencies; (d) direct market provision by formal and informal commercial providers; (e) indirect state provision through sub-contracting. (Joshi and Moore, 2004 in Allen and Hoffman 2008).

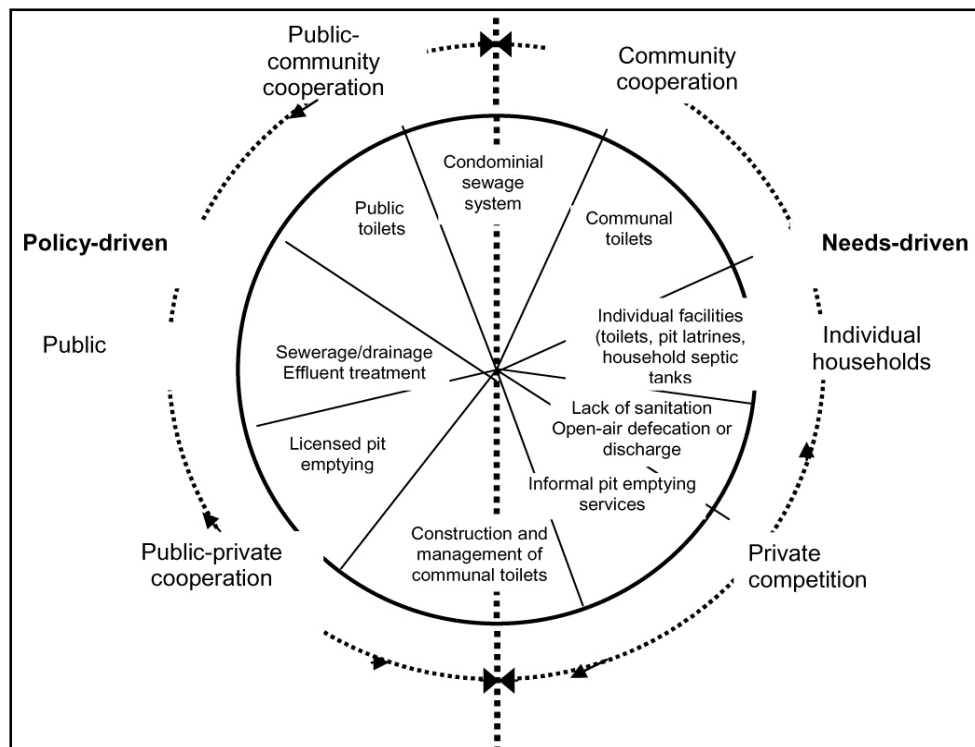


Figure 2 : The 'Sanitation Wheel' from Allen and Hofmann, elaborated on the basis of Tayler (2005).

However, the sanitation wheel mostly focuses on the beginning of the sanitation chain: providing a seat (or plastic bag or no seat at all) and in some cases collection and transportation. The right side of the wheel shows that treatment, planning, hygiene remain largely unaddressed when the poor need to rely on self-service.

Within the context of the symposium, this sanitation wheel will be used to analyse the underlying governance arrangements that are presented in the different case studies. The lead questions are whether the poor were reached and whether their involvement led to their empowerment. Subsequently, the scalability of these approaches will be investigated.

In the next part of this paper we look at some of the ways in which some of the challenges might be met. Are partnerships a viable solution to the problems of governance? Are there innovative financing methods that could open up new ways to afford integrated services? Are there innovative technologies that seem better suited to being adapted to governance systems that are possible within poor urban areas?

### Box 5: Community managed toilets

If there is any doubt that demand for sanitation exists and can be met among the population of slum areas, then the experience of the inhabitants of the slums of Pune, India, will remove it (UN Habitat 2004, Box 7.2 and Burra, Patel and Kerr 2003). Half a million people gained access to sanitation in a multi-sector partnership-implemented approach. Sparked by the desire of the city commissioner to improve sanitation, contracts were sought to build and operate public toilets. A local NGO, SPARC, formed an alliance building on existing relationships with people's organisations, Mahila Milan and the National Slum Dwellers' Federation. The alliance became a main contractor, designing and costing the work, while also developing its own capacity for management and maintenance. This process led to innovations and design improvements in public toilet blocks. They were better lit, had sufficient water for cleansing and washing, had separate entrances for women and men and incorporated children's blocks with specifically designed facilities. Equally important, was the fact that the blocks had room for caretaker dwellings and so the critical issue of maintenance and cleanliness could be successfully addressed. The practise spread successfully to Mumbai and has found adherents and similar success in other Indian cities and is now spreading further afield, including to Nairobi and Dhaka.

### **Partnerships for service delivery**

*This section draws upon the essay authored by Kathy Eales for this symposium: “Partnerships for sanitation for the urban poor: Is it time to shift paradigm?”*

In the absence of a flush and forget system, then the sheer number of unserved people, the diversity of environments in which they live, and the formidable nature of scaling up sanitation technologies, make the provision of urban sanitation a massive challenge. Looking at conventional sewerage type approaches, very few urban public utilities have the capacity and intention to deal with these problems without support from private sector and civic society, the same applies to private utilities. Water-borne sewerage remains out of reach for the vast majority of the urban poor (Eales 2008).

Additionally, as the challenge is to address all elements of all parts of the sanitation chain, from demand creation/hygiene promotion, through consultation and planning, to construction, operation and maintenance, and (eventually) replacement and as this has to be done for each link in the chain: facility, transport, treatment and disposal, then it is obvious that a single entity can not do this, effective partnerships are required.

Partnerships have been defined as ‘instruments that enable organisations with differing skills and priorities to leverage increased impact through working together than would be possible by working alone’ (Evans, McMahon and Caplan 2004: 1 quoted in Eales 2008). They bring together ‘the technical skills of professional service providers, the social-development skills and local knowledge of civil society groups, and the planning and management responsibilities of local government’ (Ibid.) There are many forms of partnership, but key in this sector are those between governmental stakeholders, civil society stakeholders and non-government service providers. In the complex urban environment, all these stakeholders are likely to have a different (and often partial) understanding of the problem, different priorities, and conflicting and overlapping mandates. A first step to effective partnerships is to defragment and work towards a common understanding of the problem and a shared vision. This is often a difficult and slow process. (Butterworth, 2008)

Partnerships viewed from a pragmatic point of view can become vehicles for cost sharing and cost recovery. Good partnerships provide room for meaningful participation of all involved partners and eventually lead to the empowerment of the urban poor. (In her background paper, Eales focuses on tri-partite partnerships between civic society, urban authorities, and private sector. During the symposium, alternative arrangement such as Learning Alliances<sup>14</sup> or multi-stakeholder platforms will also be discussed.)

There is a growing evidence of successful partnerships in the WASH-sector, most (but not all) of them in the water sector. Effective sanitation delivery requires the involvement of a range of stakeholders. Such co-ordinated efforts seem to be more common in rural areas rather than in urban areas where fragmented and overlapping government responsibilities often form a major bottleneck. Partnerships for delivery of urban sanitation services face a set of specific challenges.

- The lack of security of tenure in most urban slums is one of the main stumbling blocks for the formation of partnerships. As noted, formal involvement of urban authorities is often equated with the granting of tenure rights. Moreover, without tenure rights the poor are reluctant to invest in the improvement of their habitat.
- The high mobility of the urban poor and the lack of a sense of community hamper the building of stable and long-lasting partnerships.
- Political realities as described above and the resulting culture of distrust and deceit create another stumbling block.
- Partnerships for sanitation need to cover a wider range of activities than those for water, especially in the case of off-site disposal.

As a consequence, cases of successful partnerships to deliver sanitation services to the urban poor are limited. Eales in her essay discusses the following partnership models: (a) partnership for on-site sanitation (b) condominium sewerage (c) community managed sewerage. She argues that that, to date, successful partnerships are an exception rather than rule and that it took strong, mature and fairly well-resourced partners in combination with time and determination to make these exceptions work. In many parts of the developing world these ingredients are missing, hence, there is a lot to be done to create the environment in which necessary partnerships can grow and thrive.

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<sup>14</sup> For more information on Learning Alliances refer to: <http://www.irc.nl/page/14957>



However, there might be a case for partnerships to contribute towards more coherence in the fragmented urban landscape and advocate for more pro-poor service delivery. Complex and seemingly intractable (wicked) problems<sup>15</sup> such as urban sanitation are often characterised by disagreement between different stakeholders of the exact nature of the problem and a sense that one's own problem needs to be dealt with at a priority basis. Partnerships such as this could be used to move towards a common understanding of the problem and a shared vision of future direction. This is more of a multi stakeholder engagement, rather than a conventional partnership. Such forums might not always be long-term sustained efforts to build partnerships but could involve a series of interactions over a period of time.

The final role that partnerships could fill is that of seeking accountability of service providers. How can this be sought and what measures and support do those who seek this need? There is a small but growing body of experience in using citizens' report cards and other accountability seeking or incentivising devices. One thing that slum dwellers do have in their favour is weight of numbers. How can this be used to lever services from providers who otherwise prove to be unaccountable?

### **Box 6: Condominium sewerage**

The flush toilet has many advantages when the discharge is taken away in sewers or a septic tank – the principle one being that the more offensive elements of defecation are reduced. But the chance of this sort of technology being available to people in the developing world are limited, partly because of the sheer cost of the sewerage system.

However, there have been examples where a reduced scale sewerage system has been implemented and proved most beneficial. For example, the Orangi Pilot Project, in Karachi, Pakistan, a combination of strong leadership and committed local organisations led to the implementation of small bore sewerage at significantly reduced cost compared with full bore sewerage. This has spread to other cities in Pakistan and further afield.

In Tegucigalpa, Honduras a similar principle was applied slightly differently. The condominium sewerage system is one where (small bore) pipes are laid in sequence along a row of dwellings (as against there being a main sewer and branches, as with "conventional" small and large bore sewerage systems). Such a system was developed in this case through the mobilisation, contribution and persistence of local people who had survived the landslide induced horror and subsequent deprivations of Hurricane Mitch in 1998.

Black and Fawcett (2208 – Page 57) indicate that now every home in the *barrio* has a toilet, while health visitors continue to maintain high levels of hygiene through a programme of visits. But there are drawbacks. Sometimes the cost, if community voluntary labour is included, can be comparable to conventional sewerage. Also, the success of the system depends upon there being a reliable and large supply of water. But possibly critical, is the fact that, for such an investment of time, labour and finance to be made, the location needs to have security that it will not be razed or inhabitants evicted. The issue of tenure is, once again, a vital consideration.

There is little doubt that small bore/condominial solutions are appropriate in some circumstances – water resources need to be reasonably plentiful, a high degree of community cohesion appears to be a requirement and costs are not necessarily that low. So, it is not a cure-all for urban areas and careful consideration is required prior to its recommendation.

### **Financing sanitation**

*This section draws on the paper written for this symposium by Sijbesma, Diaz, Fonseca, and Pezon: Financing Sanitation in Poor Urban Areas.*

Amongst all the problems cited for the failure of urban sanitation services for the poor, finance constitutes one of the most fundamental obstacles. Almost all the models for providing scaled up services rely on the users being able to contribute substantially to service provision – yet in urban areas, the start up costs of any large-scale scheme are huge. The issue of financing sanitation services is characterised by a lack of clarity, lack of agreement and lack of data. What scarce data are available mostly concern the delivery of toilet seats rather than a sustainable service. The costing of the delivery of urban sanitation services should be subdivided into these categories:

<sup>15</sup> Wicked problems can be defined as problems that only can be understood by exploring solutions, and each wicked problem is new and unique. There are no definite solutions and solutions are not right or wrong. Finally, solving wicked problems are one-shot operations as the implementation of a solution will change the problem.

- Capital investments in fixed assets (CapEx<sup>16</sup>) – this is the cost of hardware investment in pumps, pipes, latrines, etc
- Capital maintenance expenditures (CapManEX) – the full depreciated replacement costs – rarely taken into account in investment decisions
- Operating & minor maintenance expenditures (OpEx) – the annual operation and minor maintenance costs, such as the costs of diesel or electricity for pumping, costs of operational staff, small replacement parts
- Direct support costs – the software costs (training, facilitation, community mobilisation, hygiene promotion, etc.) associated with the implementation and maintenance of hardware
- Indirect support costs – the costs that fall outside the direct system, but which are needed at higher levels of scale, such as training by districts, development of water resources management plans, etc

This categorisation can be applied to each stage of the cycle, at each element of the sanitation delivery chain (planning, collection, transport, treatment and disposal).

The most comprehensive assessment to date of likely capital costs of sanitation at a global level was that conducted for the Camdessus Panel of 2003. It noted that the costs of achieving the water and sanitation MDGs were likely to be of the order of US \$30bn each and every year until 2015. An unpublished IRC global literature review shows that the capital investment costs for sanitation vary widely according to the technical options chosen. For example, if the 180 million urban inhabitants of Africa who currently lack adequate sanitation were to gain access to improved sanitation, this would cost US \$5 billion for simple pit latrines up to US \$25 billion in the unlikely (and undesirable) event that conventional sewerage systems were made universal in urban areas.

**Table 2 : Capital investment costs – sanitation**

Type of system	Capital Expenditure (US \$/capita 2004 PPP)
Simple pit latrine	28
VIP latrine	50
Double vault latrine	50
Pour flush latrine	54
Urine diversion/ecosan	81
Conventional sewerage	139
Small bore/condominial sewerage	64

The partly overlapping categories in Table 2 make it clear that delivery of sanitation services involves a great deal more than the initial hardware costs, often presented as the total needed to meet the MDGs (Sijbesma *et al*, 2008). Finance can be raised from a range of sources such as households, communities, private sector, and government but making stakeholders pay for the negative impacts of inadequate sanitation services downstream will remain a challenge. A literature search found that most authors focus on the costs incurred at the household and community level and the finance mechanisms to cover these costs. Little has been written about the costs and finance mechanism for other parts of the sanitation chain, software costs, and maintenance and operating costs. This gap needs to be filled to achieve a better understanding of the delivery of sanitation services.<sup>17</sup>

In terms of sourcing finance at the household and community levels a number of interesting approaches are being developed. Sijbesma *et al* (2008) note that these approaches are all aimed at making sanitation facilities affordable mainly by

- Adjusting payments requirement and modalities to the ability of people to pay and to the mechanisms they use: for example, a high connection fee constitutes the principal bottleneck in many projects that target the poor. An innovative financial approach would look at solving this problem by spreading the connection fees over a longer period, instead of asking for an up-front payment.
- Increasing acceptability and willingness to pay: this can be done by increasing awareness of the core issue of sanitation among the population and by adjusting the service to their varying expectations and opportunities. Although this is not, in itself, innovative financing it is a core activity to make financing more effective. Sijbesma *et al* detail a number of mechanisms such as grants, low interest loans, group saving schemes, solidarity funds, revolving loans etc. They cite Tremolé *et al* who says that successful innovative financing examples share a number of characteristics:
  - low-income groups have information about various options
  - users and communities decide for themselves

<sup>16</sup> These definitions (CapEx, OpEx, etc.) were developed by Catarina Fonseca, IRC.

<sup>17</sup> Personal communication with Christelle Pezon and Catarina Fonseca.

- finance schemes acknowledge the need to cover soft costs (training, advocacy, knowledge) and hard costs (infrastructure)
- the local private sector is involved
- the main source of finance continues to be user fees (in order to be sustainable)
- barriers to extending the service to unserved inhabitants are broken

Subsidies have been at the centre of intense debate for the delivery of sanitation. Experience indicates that subsidising hardware without investing in behavioural change programmes is likely to undermine the sustainability of rural sanitation services. Approaches such as Community Led Total Sanitation argue strongly for no subsidies at all. However, a practitioners' workshop in Bangladesh agreed that in many cases a subsidy is needed to reach the very poor and concluded that all rural sanitation projects for the poor do contain a subsidy element (Wicken *et al*, 2008). Often the software costs of interventions are not calculated or charged for.

Black and Fawcett (2008) point out how in England, the toilet was paid for by the householder, while all other elements were paid for by the state. In time, users paid for the operating cost of these publicly provided elements but it has only been since privatisation in the UK that the user is in effect being asked to pay for capital renewals. However, it seems clear that the costs of delivering urban sanitation services to the poor can only be partially be recovered from the poor themselves. A (large part) of the costs will need to be covered through tax revenues or donor grants.

## Conclusions

Providing adequate and affordable sanitation services to the urban poor seems to be one of key challenges for the sanitation sector. As described at the start of this paper, the number of unserved people has remained the same over the last decade; compounded by the failure of many existing services. As also noted, the actual number of people who not served could be four to five time higher than the official estimates. Finally, providing sanitation services cannot be limited to providing a seat only; to ensure the health of tomorrow's cities treatment of faecal sludge need to be addressed.

A service delivery approach provides a lens to moves the focus from considering projects to considering the entire chain of activities that need to be achieved to deliver sustainable sanitation service at scale. Such an approach assumes an active engagement with urban stakeholders rather than fencing them off in order to create small islands of success that are unlikely to be scaled up. During the symposium, our first key question is: *“Is the presented approach or methodology well embedded in the urban environment, hence does it have potential to be scaled up?”*

Looking through the service delivery lens makes clear that a co-production or partnership involving formal and informal partners and governmental and non-governmental partners is needed to deliver sanitation services to the urban poor. This is a far cry from the current situation in which most of the urban poor rely on self-service including “flying toilets” and open defecation. This background paper brings out two clear messages:

1. Existing understanding and thinking about urban sanitation shows large gaps when it comes to delivering services along the chain to the poor at scale.
2. It is clear that an interdisciplinary approach is needed; technological options come with different price tags and need different government and partnership arrangements, etc.

Irrespective of the starting point, choices in one of the highlighted key areas (technology, governance and partnerships, and finance) have a direct impact on each other. For instance, simple sewerage requires a certain type of partnership between local community, civil society, and city authorities; and also needs certain regulations to be place, with room for community involvement, etc. The symposium seeks to explore all cases from these angles. For this purpose, the second key question has been formulated as follows: *Whose shit is it, how is it dealt with it and who foots the bill?* These key questions shed a light on two main objectives of the symposium: what are the promising approaches? and what are the gaps in our common understanding on the delivery of urban sanitation services to the poor?

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## References

- Allen, Adriana, and Pascal Hofmann with the collaboration of Hannah Griffiths 2007: “Moving down the ladder: Governance and sanitation that works for the urban poor” Essay for the IRC Symposium on Urban Sanitation. IRC International Water and Sanitation Centre. Delft, The Netherlands, 2008.
- Baden Sally. 1997 “Economic Reform and Poverty: A Gender Analysis” Report prepared for the Gender Equality Unit, Swedish International Development Cooperation Agency (Sida)” BRIDGE (development - gender) Institute of Development Studies University of Sussex. Accessed November 2008 at <http://www.bridge.ids.ac.uk/reports/re50.pdf>
- Baken, R.J. 2000. “Plotting, squatting, public purpose and politics. Land market development, low-income housing and public intervention in Vijayawada and Visakhapatnam, India (1900 – 1993)” PhD thesis. Free University of Amsterdam. The Netherlands.
- Baken R.J. 2008. “The political and administrative context of slum improvement: two contrasting Indian cases” Essay for Symposium on Urban Sanitation. IRC International Water and Sanitation Centre. Delft, The Netherlands.
- Batley, R 1996 “Public-Private Relationships and Performance in Service Provision”, *Urban Studies*, Vol. 33, Nos. 4-5, 1996, pp. 723-751.
- Black, Maggie and Ben Fawcett 2008 “The Last Taboo – opening the door on the global sanitation crisis” Earthscan, London and Sterling VA,
- Burra, Sundar, Sheela Patel and Thomas Kerr “Community-designed, built and managed toilet blocks in Indian cities” *Environment & Urbanization* Vol 15 No 2 October 2003; Page 11 *et seq*
- Butterworth, John, Sutherland, Alistair, Manning, Nadia, Darteh, Bertha, Dziegielewska-Geitz, Monica, Eckart, Jochem, Batchelor, Charles, Moriarty, Patrick, Schouten, Ton, Dasilva, Carmen, Verhagen, Joep and Bury, Peter 2008: “Building more effective partnerships for innovation in urban water management” conference paper. Not published.
- Eales, Kathy 2008. “Partnerships for sanitation for the urban poor: Is it time to shift paradigm?” Essay for Symposium on Urban Sanitation. IRC International Water and Sanitation Centre. Delft, The Netherlands, 2008.
- Evans, B., McMahon, J. and Caplan, K. 2004. “The partnership paperchase: Structuring partnership agreements in water and sanitation in Low-Income countries” BPD Water and Sanitation. London 2004
- Harpe, Jean de. “Strengthening local governance for improved water and sanitation services” IRC International Water and Sanitation Centre; Delft 2008 accessed via <http://www.irc.nl/page/37842> November 2008.
- Holden, Richard 2008. “Urban Sanitation Technologies: The Challenges of Reaching the Urban Poor” Essay for Symposium on Urban Sanitation. IRC International Water and Sanitation Centre. Delft, The Netherlands.
- Jockin A, Sheela Patel and Sundar Burra. “Dharavi: a view from below” *Good Governance (India) Magazine* Vol 2, No 1; Jan/Feb 2005
- Joshi, A and M Moore. “Institutionalized coproduction: Unorthodox public service delivery in challenging environments” *Journal of Development Studies*, Vol. 40, No. 4, 2004, pp. 31–49.
- Masika, Rachel, Arjan de Haan and Sally Baden. 1997. “Urbanisation and Urban Poverty: A Gender Analysis. Institute of Development Studies. Bridge Reports 54.
- Nelson, Valerie, Adrienne Martin and Deirdre Casella. 2008. “ Learning Alliances Briefing Note 10: An Introduction to Social Inclusion (Draft)” Briefing Note for SWITCH Project. IRC International Water and Sanitation Centre, Delft, Netherlands. Accessed November 2008 from [www.switchurbanwater.eu/page/2712](http://www.switchurbanwater.eu/page/2712)
- Qutub, S., Salam, M., Shah, K. and Anjum, D. 2008. “Subsidy and sustainability in urban sanitation : the case of Quetta Katchi Abadis Environment Management Programme 1997 – 2003” In: *Beyond construction : use by all : a collection of case studies from sanitation and hygiene promotion practitioners in South Asia*. London, UK, WaterAid and Delft, The Netherlands, IRC International Water and Sanitation Centre. Available at: <http://www.irc.nl/page/40450>
- Ryan, Peter. 2008. “Best practise in the management of small town water supplies – synthesis report”, for TPP Ghana, IRC International Water and Sanitation Centre, Delft, Netherlands
- SIDA, 1998. “Ecological Sanitation” Department for Natural Resources and the Environment, Swedish International Development Cooperation Agency. Accessed August 7 2007 from: <http://www.gtz.de/ecosan/download/sida-ecosan-en.pdf>

- Sijbesma C, Diaz C, Fonseca C, Pezon C, 2008. Financing Sanitation in Poor Urban Areas. Essay for IRC 40 Symposium.
- Sustainable Sanitation Alliance: Accessed September 2008 at <http://www.susana.org/> (under Vision).
- Taylor, K. 2005. "Notes on sanitation and wastewater disposal". Prepared for the Research Project Service Provision Governance in the Peri-urban interface of Metropolitan Areas, Development Planning Unit, University College London.
- UN HABITAT 2004 "Water and Sanitation in the World's Cities – local action for Global goals". UN Habitat/Earthscan, London
- UN HABITAT 2008 "international forum on urban poverty programme document "Report on forum held in Nairobi, June 1998. UN HABITAT. Accessed May 2008 at <http://ww2.unhabitat.org/programmes/ifup/download.asp>
- UNICEF/WHO Joint Monitoring Programme for Water Supply and Sanitation. 2004. "Meeting the MDG drinking water and sanitation target: a mid-term assessment of progress" UNICEF New York and WHO Geneva
- UNICEF/WHO Joint Monitoring Programme for Water Supply and Sanitation. 2008. "Progress on drinking water and sanitation – special focus on sanitation" UNICEF New York and WHO Geneva.
- Verhagen, Joep. 2004. "Cities, Lakes, and Floods. The Case of the Green Hyderabad Project. India" in Urban Flood Management edited by A. Szöllösi-Nagi and C. Zevenbergen. A.A. Balkema. The Netherlands.
- Wicken, James, Joep Verhagen, Christine Sijbesma, Carmen Da Silva and Peter Ryan (Eds). 2008. "Beyond construction; use by all. A collection of case studies from sanitation and hygiene promotion practitioners in South Asia". WaterAid, IRC International Water and Sanitation Centre, London and Delft.