Strategic elements in water supply and sanitation services in urban low-income areas

By Madeleen Wegelin-Schuringa, IRC International Water and Sanitation Centre, Delft, the Netherlands

Introduction

In many cities and towns in developing countries, access to basic infrastructure services such as water supply, sanitation, solid-waste collection and drainage is inadequate for a majority of the residents, especially for those living in low-income urban areas. The rapid rate at which the populations in these areas are increasing compounds this situation and often leads to environmental living conditions that endanger the health of the residents, with consequent losses in productivity and quality of life.

Many governments have come to realise they will not be able to extend services to all urban residents with conventional strategies. It is to this end that innovative approaches are being introduced, not only with respect to technical solutions, but also in ways to involve different stakeholders. On the basis of the experiences built up over the years, a number of strategic elements can be identified that affect the viability and sustainability of all activities aimed at improving basic service provision in urban low-income areas. These elements are legal and regulatory framework, the social context, the institutional context, the financial context, the environmental context, technology and service levels.

A short introduction to these elements is given below, as well as some key options for actions to address them in practice. Although it is clear that some of these options are beyond a particular programme to change, it may be possible to convince a municipality to adapt existing rules and regulations on a trial basis. If all have to wait until policies or management structures have changed, the conditions in low-income urban areas will deteriorate even further.

Legal and regulatory framework

Security and/or legal recognition of tenure is often a prerequisite for the investment of resources in basic infrastructure services for both the residents and the municipal authorities. The residents will not spend their money on infrastructure if they are not sure they can stay in the settlement. Municipal authorities are often not allowed to provide services in areas that are considered illegal, even though a high percentage of their population may be living there. Yet, to obtain legal recognition not only requires lengthy formalities and complicated bureaucratic procedures, but is often also a hot political issue. In addition, it can easily result in increase in value of land and houses and therefore may lead to expulsion of tenants and poor homeowners. Luckily, in many cities it has been demonstrated that de facto security of tenure can be as functional as legal recognition in mobilising low-income communities for infrastructure improvements.

A second issue is that legal recognition of tenure may only be obtainable if housing and infrastructure services comply with the standards that are set in the regulatory framework. Often, these standards are set so high that they are neither functional nor beneficial to the residents and tend to stifle rather than to promote development. In Kenya, the...
regulatory framework was changed to incorporate a ‘deemed to satisfy’ regulation, which enabled the municipality to lower its standards for these areas.

**Options for action**
- Find ways to ensure de facto security of tenure where legal recognition cannot easily be obtained,
- Introduce flexibility with regulations or other legal impediments that prevent service provision in illegal areas,
- Lower existing building and service standards to ‘deemed to satisfy’ solutions,
- Make it possible for communities to register as a legal entity, facilitating community management and ownership of WSS assets,
- Promote a regulatory framework that stimulates private-sector operators or public–private partnerships to provide services.

**The social context**

Just like in rural areas, basic infrastructure services in low-income urban communities have the best chance of being sustainable if the community is motivated to improve the services, has been involved in their planning from the start and has selected the technology and service level. For this to happen, a community needs to become organised and overcome internal differences. This can be very difficult in urban areas as a result of a heterogeneous composition in terms of ethnicity, religion, occupation and economic conditions. This not only can create a lot of distrust between the different groups, but the common leadership needed to overcome it, may well be lacking.

In areas where the proportion of tenants and absentee landlords is high, community organisation is very difficult because tenants do not feel responsible for improvements, while the absentee landlords do not suffer from poor environmental conditions. Motivation for improvement of basic services can be low, as the prime concern may well be a cheap and temporary place to live, the improvement of economic conditions or the increase of employment opportunities.

Another factor of influence on motivation is the degree of urbanisation of the residents. If primary attachment is to the rural home, any savings are likely to be spent in the rural areas. When the city is acknowledged to be the home base, especially for the future generation, residents and especially resident owners of structures are more inclined to spend effort and funds towards improving their neighbourhoods and adaptations to suit high-density living.

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In many cities, women head the majority of the households. These households usually also belong to the poorest households in the community. Yet males often dominate organisations and little effort is done to plan, implement, operate and maintain basic services in such a way that gender-specific and poverty-related concerns are taken into account. This may affect the priorities for development activities stated by the community and hence may affect the degree of participation by women, and therefore the sustainability of the systems.

**Options for action**
- Ensure that the different segments of the community (women, men, young, old, rich, poor, etc), their leaders and their organisations are identified,
- Develop an information and communication strategy that addresses all segments,
- Ensure that all segments are involved in planning,
- Develop participatory hygiene-education activities based on self-assessment of existing conditions

**The institutional context**

Municipal authorities have the main responsibility for the provision, operation and maintenance of urban water-supply services. Their interest is the smooth functioning of the water-supply service, low operating cost, adequate revenues and the possibility to expand services if necessary. They are not necessarily concerned with the provision of services to low-income areas. Their often poor performance is caused by internal problems (lack of management, financial autonomy, decentralisation of decision making as well as lack of human resources and capacity) and external conditions (political influence, unclear and/or conflicting responsibilities at different government levels, centralisation of decision making).

Few municipalities have a section in their water and sanitation departments in which staff is trained to work with and for communities, while co-ordination with the departments that do have this staff is usually weak. Yet participatory approaches to infrastructure improvements require a specific attitude within the municipal authorities in which residents are seen as stakeholders and clients rather than as receivers of services. They also require longer time frames, more flexibility, a well-developed information and communication strategy and training for municipal staff, different from conventional programmes.

The lack of performance of the municipal authorities has led to a situation where a majority of residents in low-income areas is dependent on other service providers for their basic services. These may be formal private-sector providers but they usually are informal, such as individuals, families and small enterprises. They are engaged in similar activities as formal enterprises, but on a smaller scale and usually confined to service provision in low-income areas. The main interest of these enterprises is income generation. Because they are small, they are flexible and able to re-
spond to demand from the consumers, while profits made are often reinvested in the same area, therefore contributing to improvement of conditions.

A second form of informal service provision is generated through community-based organisations and/or NGOs, who themselves may either become service providers or assist the communities and their organisations in the development of a sustainable service. In many cities, NGOs have developed a function as a mediator between the communities and the municipal authorities. There is a whole range of different types of community-managed service provision ranging from group taps and community-managed kiosks to completely autonomous community-based systems. Some of these systems suffer from local politics that are characterised by patronage relationships between politicians and communities, in which provision of infrastructure becomes an attractive political power tool.

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Options for action

- Establish a special section in the municipality/utility to deal with service provision in low-income areas
- Promote training in municipal authorities on issues and approaches for service provision in low-income areas
- Assess roles, responsibilities and institutional relationships of all service providers and other stakeholders in the area, and involve and incorporate them in planning for improvements
- Promote establishment of public-private partnerships and informal sector operations
- Assess legal impediments for informal service provision and if dysfunctional, try to address them
- Promote environmental concerns and hygiene education activities with informal service providers

The financial context

An often-used argument reasoning why authorities cannot provide water in low-income areas is that the residents cannot sufficiently pay for their water to operate and maintain the system, let alone to get a return on the capital investment. This is not true in most cities, as most people in low-income areas depend on vendors for their water or buy water per bucket. The prices paid for this are considerably higher per unit than through a connection to the water-supply system. The differentials in the cost of water (ratio of price charged by water vendors to prices charged by the public utility) vary from city to city (from 5:1 to 100:1) and are dependent on various factors such as access to alternative sources and control and competition on the resale market.

A more valid reason why service provision in these areas is low is that most utilities charge tariffs that are not based on cost-recovery calculations, but are heavily subsidised. The determination of tariffs is a political issue and governments profess to regard water as a social good rather than an economic good. However, since the higher- and middle-income residents are more likely to be connected to the water network, the subsidies and the social good benefit them rather than the poor. The result is insufficient resources to extend the network, especially to the badly located low-income areas. Of influence as well on the resources—physical as well as financial—are the high rates of water unaccounted for, common in many cities in developing countries, reaching extreme levels of 40–60% of the water produced.

Other basic infrastructure services (drainage, sewage and solid waste collection) are commonly funded through taxes, which people in low-income areas often do not pay. The financing of these services is usually already a problem for the whole city and the lack of tax collection is therefore a welcome excuse for non-service.

At the community level, financing and cost-recovery mechanisms are influenced by the degree of demand responsiveness, but also by the mechanisms in place for payments and contribution. It needs to be noted that contribution in kind (labour or materials) may be difficult to organise because time is money and income opportunity lost.

Options for action

- Promote the concept of water as an economic good and the use of subsidies, if at all necessary, to improve access to services by the poor
- Promote a more equitable division of basic infrastructure services and adherence to cost recovery in principle and in action
- Remove impediments to an open, informal market as it drives up prices for the poor
- Develop payment systems together with the community representatives
- Ensure that there are mechanisms that allow access to services by the poorest
- Develop approaches that help communities to select a system and level of service that they want and can pay for

The environmental context

The environment in low-income urban areas is often characterised by high densities and location on land that is not very suitable for residential purposes, such as steep hills, riverbeds or swamps. The general lack of space in the areas stresses the interdependency and integrated nature of all infrastructure services. Improvement of water supply necessitates improvement of drainage, which requires improvement of solid-waste collection; off-site sanitation options require sufficiency of water supply. The condition and presence of roads, moreover, is connected to all these services. Yet authorities work sectorally.
which makes integrated planning at community level very difficult.

The hygienic disposal of wastes is more difficult than bringing in water, while the provision of the water supply has more priority with the residents and is therefore more likely to be facilitated by municipal authorities. The lack of attention for disposal results in environmental conditions that pose a threat to the residents’ health, especially because systems installed by householders themselves often have a low technical quality and contribute to deterioration of environmental conditions.

Options for action

- Establish co-ordination mechanisms between sectoral departments that work in the same low-income areas.
- Assess what environmental problems are linked to the supply or non-supply of water and sanitation services.
- Base activities on community assessment of their priority environmental issue.
- Build on any activities that are already being undertaken by the community, or other actors, to ameliorate the problems.

Technology and service levels

Technologies appropriate for low-income areas are those in which the technical and organisational characteristics of the infrastructure system are adapted to the socio-economic and environmental conditions in the community. The reverse is common as municipal service providers are focused on conventional systems. The prevailing technical standards and regulations often hinder the application of appropriate technologies, and the systems are not adapted to actual need and demand in low-income areas. Municipal engineers, moreover, are not trained in low-cost technologies and regard these as substandard.

Many so-called appropriate technologies have been developed for the rural areas, but their adaptability for use and operation in low-income urban areas is not always clear. Foremost, the type of land and the densities of these areas require specific technologies. Second, operation and maintenance requirements for these systems by the community may be more difficult to organise as a result of the nature of the urban communities. A third point is the environmental impact of technologies in the high-density conditions prevailing in most areas. Finally, appropriate technology options at community level will have to link up with the hierarchical network of the whole city and cannot therefore not be developed in isolation.

Epilogue

These strategic elements show how difficult service provision in low-income areas actually is. While many aspects are more difficult to address than in rural areas, there are also aspects that make a sustainable provision easier. For instance, there is a greater prevalence of NGOs, facilitating a mediation role between municipalities and communities, and more civic organisations that can be prevailed upon for the management of systems. A money economy, more access to spare parts and repair services and the existence of a private sector enhance sustainability in urban service provision. Finally, the existing municipal service network at least ensures one source of water supply.

Time, flexibility and effective communication in and between the municipality and the community is crucial. Moreover, capacity building is needed not only in the municipality and the community but also in sectoral organisations or NGOs to ensure that, with the help of participatory approaches, community-based development is stimulated and appropriate technologies are applied.

The author of this article can be contacted at wegelin@irc.nl.