



Urban WASH programming in Megacities: Supporting Low Income Communities of Dhaka, Bangladesh

SUMMARY BOX

Water, sanitation and hygiene (WASH) for urban populations is one of UNICEF's emerging areas of focus, highlighted in its Global WASH Strategy (2016-2030). 'Megacities' have unique challenges, and often house disproportionately high numbers of women and children who are severely neglected in terms of access to WASH and other essential services. Over many years, UNICEF Bangladesh has been supporting the provision of improved WASH services to the Low Income Communities (LICs) of Dhaka; experience and expertise that has led to an effective service delivery model that could be used as a template in other similar cities. This model has led to fruitful partnerships with relevant government agencies, non-governmental organisations (NGOs), and other development partners in addressing the WASH needs of the most vulnerable and poorest households in Dhaka LICs. This Field Note illustrates the UNICEF Bangladesh urban WASH programme in the LICs of Dhaka, and is designed to be useful as a learning note for the implementation of WASH programming in megacities of developing world.

Introduction

Background

UNICEF's Global WASH Strategy (2016-2030) highlights urban WASH as one of the emerging areas of focus for the organisation—given the increasing numbers of vulnerable children living in poor urban environments across the world, particularly in Asia and Africa.

This Field Note forms part of UNICEF's efforts to document its urban WASH programme experience and expertise, to inform the development of a global urban WASH framework and support the Global WASH Strategy.

This note focuses on a specific context in urban WASH programming: Low Income Communities

(LICs) in megacities. It documents UNICEF's experiences in provision of WASH services to LICs of Dhaka, Bangladesh. The project provides invaluable experience of delivering WASH services to such urban populations. It is not prescriptive- every country is different and will require a thorough urban situation analysis prior to the development of a suitable programme. However, the experience of providing WASH services to the LICs of Dhaka has expanded UNICEF's expertise in urban WASH programming. As such, it is a case study that provides a starting point and guidance for country offices faced with similar urban WASH programming challenges.

Understanding the context: Bangladesh

Bangladesh is the most densely populated country in the world, with an average of 1,278 people per square kilometre. Urban growth in Bangladesh is among the highest in Asia, with the urban population growing from 5 per cent in 1971 to 32 per cent now (around 53 million) - with urban LICs growing much faster than the overall urban growth rate. Dhaka itself is a megacity; the last official estimate in 2001 put the population at 10.7 million, while current estimates suggest it has grown to 17 million since then¹.

Calculating the LIC population is challenging, as a large proportion of it is migratory. The current LIC population of Dhaka is estimated at five to six million projected from the 2005 Census of Urban LICs in the country.

Migration is the main driver of urban growth, but evidence suggests that people migrate from rural to urban areas in search of economic opportunities, not basic social services².

Lack of tenure security is a key characteristic of LICs; inhabitants are thus deprived of support and services from both the formal public and non-public sectors. If services are provided, it is often through unscrupulous middlemen, at an extremely high cost to LIC dwellers and frequently through exploitative means. This contradicts the commonly held idea that urban LIC must have greater access to basic social services than those in more isolated rural areas, because they are physically closer to urban areas.

Despite the problems of poor tenure security, governments are often wary of developing greater housing or tenure rights for LIC dwellers, on the basis that it could encourage even higher levels of migration from rural areas. The issue is therefore often left unaddressed, allowing LICs to continue to be exploited, perpetuating the

KEY POINTS

- UNICEF is working with Dhaka Water and Sewerage Authority (DWASA) to provide WASH services to people living in Low Income Communities (LICs).
- The challenges to providing infrastructure services in such informal settlements are manifold, often arising from land tenure issues and misplaced prejudices towards LIC dwellers.
- A strategic partnership between UNICEF, DWASA and NGOs/CBOs is working to help overcome these challenges and provide sustainable WASH services at scale.
- UNICEF is also now working on delivering practical solutions; working with DWASA and NGO partners on mechanisms for effective faecal sludge management in LICs.

downward spiral of poverty among this population.³

Unlike in most countries, differences in WASH coverage between urban and rural communities in Bangladesh are quite small. For example, the Multiple Indicator Cluster Survey (2012-2013) estimated the national average of access to basic (improved) water sources as 98 per cent (99 per cent urban and 98 per cent rural)⁴.

However, when statistics for LICs are further disaggregated, the picture is

dramatically different: access to basic water sources drops to only 18 per cent for dwellers in LICs in Bangladesh, and while the national average for access to basic (improved) sanitation



Picture 1: Water distribution and sale by Water Vendors in a Dhaka LIC

¹ Estimates derived from population and housing census (2015)

² UNICEF Bangladesh. (2010). *Understanding urban inequalities in Bangladesh: a prerequisite for achieving Vision 2021*.

³ Ahmed, K.I. (2007) *Urban poor housing in Bangladesh and the potential role of Asian Coalition for Housing Rights*.

⁴ Bangladesh Bureau of Statistics (BBS) and UNICEF (2015): Multiple Indicator Cluster Survey 2012-2013

in urban areas is 57 percent, the figure drops to only 19 percent for LIC dwellers.⁵

Description of Intervention

UNICEF's WASH interventions in the LICs of Dhaka, which commenced in the 1990s, aim to achieve equitable access to improved WASH services for the most vulnerable and poorest households. The main focus of the interventions is on ensuring that the LIC residents get access to safe and affordable water supply through legal water connection. However, the programme has evolved over the years to include other components such as sanitation development, hygiene promotion, faecal sludge management (FSM) and solid waste management (SWM).

The interventions in LICs are being implemented within the framework of the country office urban programme, providing opportunities for cross-learning and leveraging of resources.

UNICEF's approach to providing WASH services has evolved over the years. WASH interventions for the Dhaka LICs have similarly adapted and changed, and can be thought of as following three distinct phases, as outlined below:

Phase 1: Direct implementation

Initially, UNICEF worked through NGOs to provide boreholes in LICs under license from Dhaka Water and Sewerage Authority (DWASA), and hygiene awareness. Although this approach was eventually phased out when DWASA stopped the use of boreholes, due to concerns about ground water depletion and pollution of the aquifer, it provided opportunity for UNICEF to continue to work with DWASA to reach LICs.

Phase 2: Partnership with DWASA and NGOs

DWASA started providing legal water connections to the LICs as early as 2006, but on a very limited scale. During the period 2006-2012, UNICEF and a few other national and international NGOs supported this initiative, acting as intermediaries between LICs and DWASA to facilitate legal connections. The local NGOs acted as guarantors for payment for DWASA bills. This became the

service delivery model that could then be adopted by other NGOs working in LICs.

PHASE 3: Long-term institutional development with DWASA

During 2010, the management of DWASA accepted and adopted the UN declaration of 'water as a human right' and started their programme called "turned around". It was decided that DWASA should provide water for all the city population—including people living in LICs. Before this initiative, DWASA was not allowed to provide legal water connections to the LIC dwellers, who does not have tenure right. UNICEF saw the opportunity to engage in a long-term 'institutional development' partnership with DWASA and supported the establishment and direct funding of the LICs unit within DWASA, to provide legal water connections in LICs. In addition, DWASA established a new division - Community Programme and Consumer Relation Division (CPCRD) in 2010 to provide WASH services to the LICs.

With political support and strong leadership, DWASA has evolved as an organisation that actively supports provision of WASH services to the urban poor. The partnership between UNICEF and DWASA is ongoing and is described in more detail in the next section.

The three different phases described above have increasing impacts in terms of scaling up service delivery. Direct implementation brings benefits, but only to those reached by the specific intervention, while broader partnership arrangements have more scope for replication of the service delivery model. However, the third phase has the greatest potential to reach large numbers of people; it allowed UNICEF to work in partnership at a higher level, to influence a whole institution in delivering its services.

The legal water connections component of UNICEF's WASH intervention in the Dhaka LICs is explored in more detail in a separate dedicated

⁵ UNICEF. (2016). *Child wellbeing survey in urban areas of Bangladesh*.

Field Note on the Accelerated Sanitation and Water for All (ASWA) project⁶.

This Field Note focuses on the institutional and historical contexts of how the urban WASH programme evolved in the LICs. Below is summary of UNICEF's WASH interventions in Korail LIC, which illustrates UNICEF's activities in supporting WASH delivery to the poor and most marginalised populations of Dhaka.

WASH interventions in Korail LIC:

Korail is one of the estimated 3,339 LICs in Dhaka with a population of about 100,000 people (around 20,000 households). It is one of the largest and oldest LICs in the city situated on government land near the wealthy suburbs of Ghulshan/Banani/Baridhara.

Water supply:

Korail was one of the first LICs to benefit from legal water supply connections from DWASA. Previously, middlemen controlled the water supply to this community through a multitude of plastic pipes, from illegal connections to DWASA pipes outside the community.

In 2006, the Government began to support formal moves to improve water supplies to the poorest areas of Dhaka, and provided legal authority for DWASA to connect (and bill) for water supply to LICs. However, DWASA still faced a challenge in providing connections in the communities, as these normally require a formal contract with a legal household to enable their system of billing and collection. Support from UNICEF and likeminded NGOs (such as DSK and WSUP) helped DWASA and its LICs unit to develop a service delivery model that could work within these constraints and provide water at scale.



Picture 2: Illegal water connections in LICs

Korail had an established, strong community-based organisation (CBO), established 35 years ago, that managed and coordinated activities for the whole community. Korail's CBO acted as the legal entity, allowing DWASA to establish a contract for water services. Water connections to household units were arranged by smaller CBOs but managed by the CBO of Korail. UNICEF helped coordinate other NGOs to provide capacity-building support to the CBOs in billing, collection of fees and depositing the collected fees in DWASA's account.

Currently, formal water supply coverage in Korail is around 60 percent, with the remainder covered by illegal connections.

Before the piped water connections were made people would pay BDT 2 (US\$0.02) for 20 litres of water, which was unsafe and required long waiting times for the illegal water vendors to deliver. Once the LIC is connected a family will pay BDT 12 (US\$0.14) per 1,000 litres of piped safe water, with no waiting time. The cost difference is nine times less.

By 2017, water tariff collection rates by the CBOs from the LICs was over 96%, better than the other parts of the city. In 2018, based on the success of the legal water connection approach and with an eye on encouraging further scale-up, DWASA began to allow CBOs to keep 7% of the tariff collected. This is beginning to change the CBOs' function to that of "small water agencies" which will encourage them to seek even better

⁶ The field note on "The ASWA Approach to Drinking Water Supply" was prepared in 2018 as part of UNICEF South Asia Regional Office knowledge management products. The first phase of ASWA project funded by DFID was implemented by UNICEF Bangladesh from 2014 to 2016 and had legal water connections to LICs of Dhaka as one of its major components.

revenue collection and more legal water connections in the LICs. DWASA is in the process of replicating this system in other big LICs in the city.

Sanitation:

The provision of toilet facilities in the Korail has largely been uncoordinated. UNICEF has worked with international and local NGOs on efforts to improve this through innovative designs of sanitation facilities, based on local context and the engagement of LIC in the planning and implementation of interventions. Based on community preference, gender-sensitive communal and shared toilets were provided.

The shared household toilets model is generally seen as the best option by both communities and service providers in terms of both convenience and management, with cleaning usually arranged by rota. The shared toilets are often provided for six to eight families, with an agreed mechanism for operation and maintenance of the facilities. These efforts mean that about 80 per cent of the LIC population now have access to both communal toilets and shared household toilets (often separate for male and female).

Faecal sludge management (FSM):

FSM is a critical issue for both the LICs of Dhaka and the city as a whole. Most toilets in Dhaka are pour-flush, and while many households have septic tanks, they overflow directly into the drainage system. Traditionally, septic tanks were manually emptied (usually into nearby drains) by 'sweepers', but this practice is not as common nowadays due to health risks and less people being willing to carry out the work.

Desludging trucks are available, but official sites for safe disposal are limited. UNICEF is working with DWASA to improve FSM, and have supported DWASA with two desludging trucks, to develop a business model for emptying services. Setting up the business model involved identification and capacity building for the identified private entrepreneurs for the project; as well as awareness raising campaigns and forging linkages with community groups; and developing a cross-subsidy mechanism to encourage a willingness to pay for the service by the LIC.

Cross-subsidising emptying charges has reduced the cost in LICs: industrial and rich areas pay the equivalent of US\$24 per load, while other

residential areas pay US\$18, and LICs around US\$12.

Solid waste management (SWM):

Although this has yet to see significant scale, UNICEF has implemented pilot schemes for SWM in collaboration with NGOs. Efforts have been made at establishing a business model for SWM involving local private entrepreneurs and the residents of LICs. The process involved identification and selection of local entrepreneurs, as well as the provision of personal protective equipment, waste collection and transportation equipment, to the identified entrepreneurs to serve as set up materials.



Picture 3: Solid Waste Management by Local Entrepreneurs in Dhaka LICs

Hygiene promotion and community mobilisation:

UNICEF has supported hygiene promotion sessions and sensitisation for LICs on the usage of water and sanitation facilities, using behaviour change communication materials. Hygiene messages focused on handwashing with soap, latrine usage and maintenance, safe water handling and menstrual hygiene.

Outcomes

Water supply

1. A successful model for providing sustainable and affordable safe water for people living in LICs of Dhaka has been developed and is now being scaled up with the support of UNICEF and other partners.
2. Women and children save time and effort not having to collect water from alternative sources, which are often of poor quality and more expensive.

- DWASA has achieved institutional change and become a hugely effective provider of water services. This has benefited both DWASA and the LICs. DWASA now has a functional LICs



Picture 4: Metered water connection provided by DWASA

unit dedicated to providing water services to the urban poor. This has gained credibility within the culture of the water and sewage authority, as it has improved their performance by reducing water losses (through illegal connections) as well as increasing revenue from new customers living in LICs. DWASA now has both the incentive and institutional support to work towards universal access for LICs across Dhaka.

The effects of the institutional change at DWASA have been incredibly transformative; the utility is now regarded as one of Asia’s best public water service providers, with 24-hour service and a surplus of water supply to meet growing demand.

By 2018, UNICEF supported over 90,000 people across seven LICs in Dhaka to gain access to improved sources through legal water connection. Cumulatively, through the support of DWASA and other organization, over 387,000 residents of LICs of Dhaka have been connected to legal water sources by 2018. DWASA is now committed to providing safe water-supply services to all LICs in Dhaka, using the model developed in partnership with UNICEF.

The UNICEF/DWASA model for improving urban water supply in LICs is also seen by UNICEF as a

template for future work with other Water and Sewerage Authorities (WASAs) in other large cities of Bangladesh.

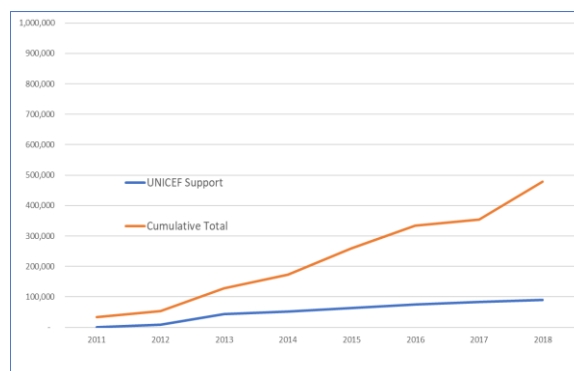


Figure 1: Legal water connections in Dhaka LICs: 2011 - 2018

Sanitation and hygiene

From 2012 to 2017, UNICEF supported the provision of 414 communal and shared latrines in the LICs of Dhaka. In addition, over 150,000 residents of LICs were reached with hygiene messages covering safe water handling, handwashing with soap and the safe use and maintenance of toilets.



Picture 5: Gender-segregated communal toilet in Dhaka LIC

DWASA has developed a sewerage masterplan for the city with the very ambitious goal of having 100 per cent coverage by 2025. Currently only 20-22 per cent of the city is served by one aged treatment plant. This provides an opportunity for advocating an extension of services to the LICs as part of the overall city masterplan.

A focus on the need for FSM is a relatively new concept and not extensively covered in earlier WASH policy documents. In collaboration with other stakeholders and relevant ministries, UNICEF has supported the development of a national institutional and regulatory framework

for faecal sludge management⁷. The framework puts the overall responsibility for execution of the entire FSM chain under Dhaka's City Corporation (though it will require collaboration with DWASA for possible treatment and re-use elements of the FSM chain).



Picture 6: Faecal sludge emptying service, Dhaka

Lessons Learned

1. **There is a policy dilemma for LICs which needs addressing:** The Government is against the 'institutionalisation' of LICs, as their long-term vision is of a city without LICs. However, there is disagreement (for example, most developing partners are advocating for formalisation of LICs), and therefore no specific plan on how to achieve this.

DWASA is taking a more pragmatic approach through legal water connections to the LICs, but they are careful not to provide service level agreements with individual LIC families – all legal requirements are met by community-based organisation. However, there are also some signs that the Government's policy on LICs is shifting slightly, for example in its Five-Year Pan covering 2016-2020, the Government explicitly committed to provide basic service for LICs.

2. **A long-term institutional development approach can lead to the delivery of sustainable services at scale:** DWASA has provided the perfect opportunity for UNICEF to work with them to build institutional

change, which has led to the provision of WASH services to the LICs of Dhaka. The experience can be seen as an example of how Dhaka's City Corporation can learn and successfully deliver on their responsibility for FSM for the city.

The institutional capacity of Dhaka's City Corporation is not as advanced as DWASA's; there are more capacity gaps, fiduciary risks, and more internal political complications. Collaboration with DWASA will be instrumental in helping the City Corporation to define its role as it works to deliver its responsibilities for FSM for the city.

3. **Holistic planning is challenging:** Dhaka's City Corporation does not have a historical culture of holistic planning; service-providing agencies usually develop their own internal plans which the City Corporation approves. It will be important for UNICEF to work with other stakeholders and the City Corporation to take a long-term institutional development approach, which will more easily enable holistic and comprehensive citywide planning that includes LICs.
4. **Expertise can matter as much as money:** UNICEF funds are a drop in the ocean compared with those of donors or the big institutions such as DWASA (DWASA expects to spend US\$2.5 billion on its 'Sewerage Masterplan'). However, UNICEF can influence the way some funds are spent, through advocacy, and by results, working on the best ways of delivering sustainable WASH services to the urban poor, UNICEF's wealth of experience and expertise are and should be seen to be invaluable.
5. **UNICEF can offer guidance and influence development bank spending:** The investments required by water utilities serving megacities are huge. The big development banks often find such investments an attractive proposition, as

⁷ An Institutional Regulatory Framework (IRF) for FSM has already been developed, and now UNICEF is supporting the government to develop a National Action Plan for implementing the IRF.

they provide a conduit for disbursing funds while promoting institutional development in terms of capacity and performance of the utility in delivering services. However, some of the banks do not always have strong in-country presence and sometimes struggle to ensure inclusive service provision, especially for the most disadvantaged and poorest urban populations. UNICEF has this presence; it can therefore influence how funds are spent, ensuring services to the poor are delivered in a more equitable and inclusive way.

Next Steps

The decision to allow the CBOs to keep 7% of the revenue collected is a milestone in the legal water connection initiative. This will allow for the CBOs to become mini-water agencies and create the possibility for more sustainable systems. UNICEF needs to work with DWASA to ensure that the CBOs manage the funds properly and consumer opinion and feedback is sought, acknowledged and acted upon. Management and operation training may be needed for these small agencies, and an assessment of their capacity would be a first step.

FSM is the next biggest WASH challenge facing the Dhaka LICs. The key areas for UNICEF to focus on are:

Improving emptying services: this will require innovations through different service delivery models, such as smaller vacuum tankers for better access, linked to bigger trucks for removal; and small-bore sewer networks for the more accessible and larger septic tanks. On-site treatment options also need developing, such as 'Ecosan' or anaerobic digesters for larger systems.

Faecal sludge treatment plants/transfer stations: transport costs are one of the biggest drivers of the price of emptying services, which would be mitigated by transfer stations closer to the area of operation. However, the design and location of such transfer stations, and the question of how these would best link to the

DWASA-planned sewer network, still need to be addressed. How these are to be paid for also needs to be considered; ideally, use of the transfer station should be free of charge to encourage safe disposal and discourage the dumping of faecal sludge into drains and ditches.

Strengthening regulation on FSM: responsibility for FSM falls to Dhaka's City Corporation, which will require assistance in introducing effective regulation, to allow the private sector to flourish without discriminating against the poor.

Taking a long-term institutional development approach with those responsible for FSM (DWASA and the City Corporation) will be critical. Building on experience from working with the LICs unit will allow for development and replication of the successful DWASA service delivery model followed for water service delivery.

DWASA's plans are to work on improving sanitation for the city, and it has developed a sewerage masterplan for Dhaka with very ambitious goals. The ambition provides an opportunity for UNICEF to address challenges for LICs (where sewers may be limited) and to influence DWASA's plans to address Dhaka's sanitation issues. It is likely that FSM will have an important role to play in the masterplan, both as an interim solution while sewers are introduced, and possibly in the longer term as a complementary measure to a partially-sewered city.

UNICEF has supported the Government to develop an Institutional and Regulatory Framework (IRF) for FSM. Currently, UNICEF is working with the Government to develop a National Action Plan to implement the framework, and can therefore use its local experience of improving water service delivery for LICs to influence policy and delivery for FSM.

UNICEF may also consider more formal dialogue/partnership with development banks, such as the Asia Development Bank, to ensure that funds are used in ways that specifically address the needs of the urban poor.

Photo Credits

UNICEF Bangladesh Country Office, Dara Johnston (UNICEF Bangladesh), John Pinfold (OPM Consultant), and Bisi Agberemi (UNICEF New York)

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UNICEF's water, sanitation, and hygiene (WASH) country teams work inclusively with governments, civil society partners, and donors, to improve WASH services for children and adolescents, and the families and caregivers who support them. UNICEF works in over 100 countries worldwide to improve water and sanitation services, as well as basic hygiene practices. This publication is part of the UNICEF WASH Learning Series, designed to contribute to knowledge of best practice across UNICEF's WASH programming. The documents in this series include:

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