

## Chapter 4

# Water and Sanitation Service Coverage



No piped water



Not enough of this

It is reported that coverage with improved water supply in urban Asia is 93%.<sup>5</sup> But what does “coverage” mean? In Manila, coverage is calculated on 9.2 persons per connection, yet the 2000 census states that there is an average of 4.6 persons per household. In many cities in South Asia, more than half the people rely on standpipe supplies. Is that considered coverage? Likewise, intermittent water supply is considered the norm in many South Asian cities, and this type of service is classified under coverage. This chapter explores the real levels of water supply and sanitation service in Asian cities. For greater insight, the city water supply profiles in Appendix 1 may be reviewed.

### A. Water Supply

The best measure of good water supply service in a city is 24-hour piped supply to the home. This is because 24-hour piped supply is linked to water quality and quantity, as well as to price, reliability, and convenience. Why is the percentage of people receiving piped water supply in many of Asia’s major cities (see Figure 4.1) so low? First, in some of these cities there are domestic wells—dug wells, shallow tubewells, and

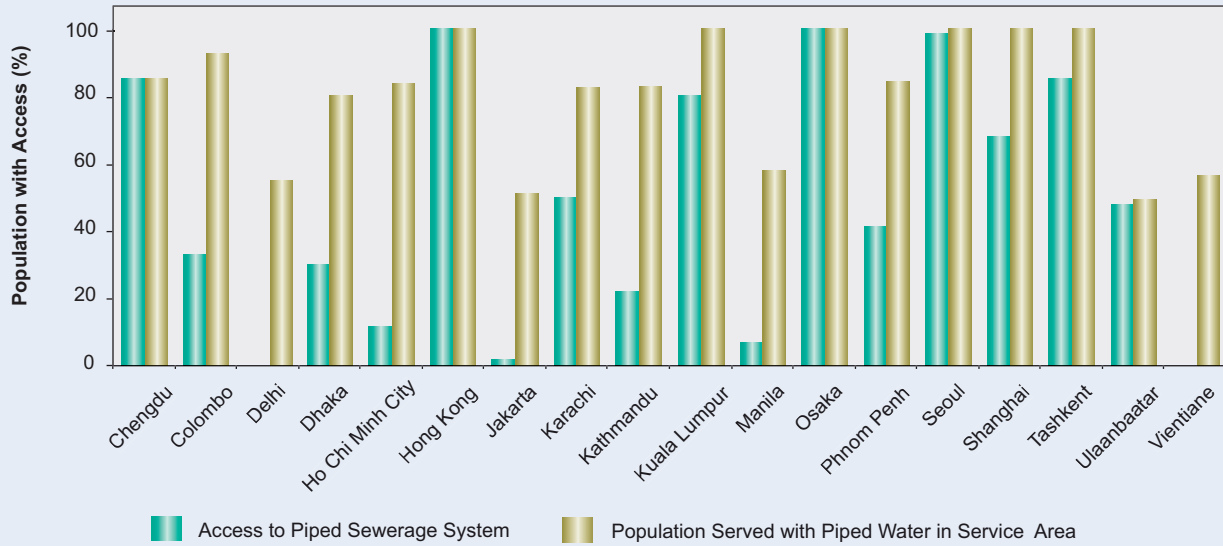
deep tubewells)<sup>6</sup>—but as groundwater levels fall from overextraction, and the groundwater becomes either salinized from overpumping or contaminated by polluted surface water, this water use will be threatened. Second, there are, especially in South Asia, extensive intermittent water supplies due to low tariffs, low metering, and the extension of distribution systems beyond their 24-hour hydraulic capabilities (see Figure 4.2). Third, there are many people in areas of cities where there is no piped water. There is a failure of water resources and water distribution to keep up with demand. It is the people living in areas of cities where there is no piped water who deserve the most attention, because they are forced to pay the vended price for water. Most say a lack of funds has caused this situation. But in most of these cities, tariffs are low and well below affordable limits (5% of household income). If tariffs were raised, there would be money available to extend services to the urban poor who are not being served. It is all a matter of equity of services and good governance.

During the Indonesian Water Sector Reforms Seminar in 2001, the Government identified problems, which included low urban coverage, low tariffs, high debt service, low development agency support, and a lack of

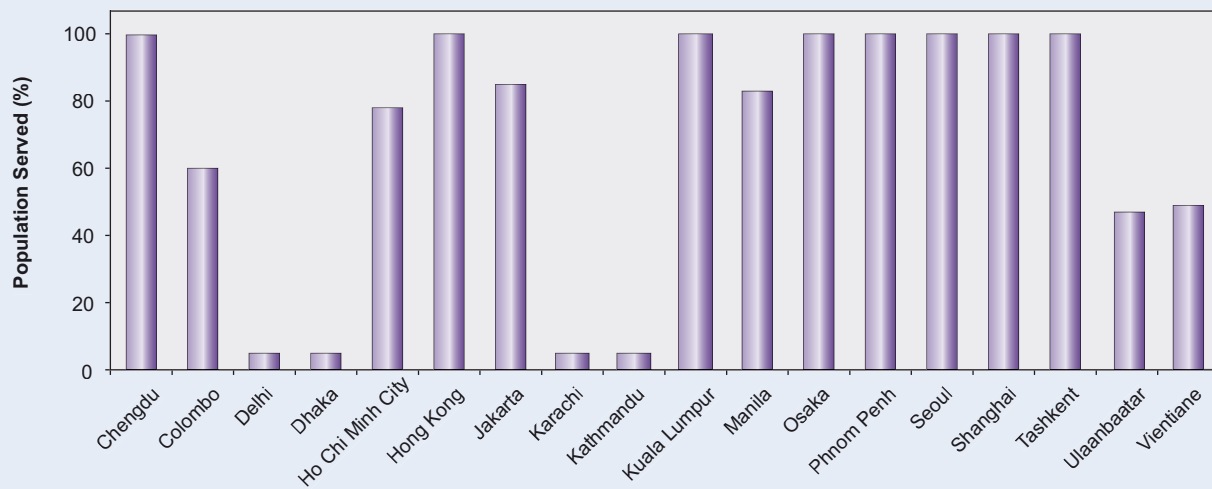
<sup>5</sup> (World Health Organization et al, 2000).

<sup>6</sup> Postevaluation findings of World Bank and ADB projects over the last 20 years have shown that water demand is invariably overestimated. Mostly this is because people already have access to alternate water supplies, such as wells, and this has not been properly factored into designs.

**Figure 4.1 Access to Sewerage and Piped Water Systems (2001)**



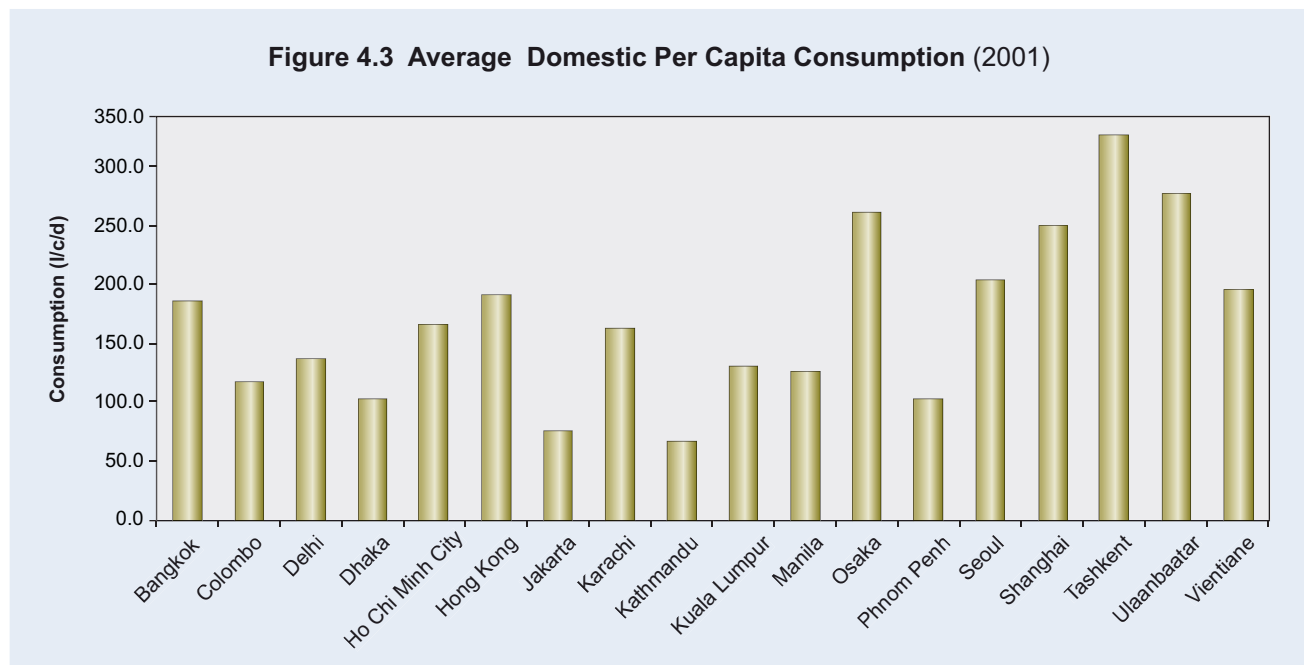
**Figure 4.2 24-Hour Water Availability (2001)**  
[among population served]



coordination. Per capita consumption varies enormously (see Figure 4.3). What needs to be examined is the equity of supply. For example, some households get 6 m<sup>3</sup> per month and others get 30 m<sup>3</sup> per month. Appendix 1 gives more specific figures for per capita consumption from house connections.

A more objective way to look at coverage with piped water is to evaluate the population per connection for a given city. Table 4.1 examines this situation for some

Asian cities and shows the increase in the number of connections from 1996 to 2001. Some disturbing results surface: In Delhi, Dhaka, and Manila the increase in connections over these 5 years is 15%, 11%, and 10%, respectively. It is apparent that the rate of increase in connections to piped water does not match the population increase in these cities, which would be at least 2.5% per annum. The other disturbing result is that the “effective coverage,” using five persons per household, is close to 30% or below in 5 of 11 cities



**Table 4.1 Effective Coverage with Piped Water (based on connections)**

City	Domestic Connections (1996)	Domestic Connections (2001)	Increase (%)	Population (2001)	People per Connection (2001)	Coverage <sup>a</sup> (%)
Bangkok	951,543	1,090,786	15	7.6 million	7.0	72
Delhi	1,096,916	1,266,303	15	13.8 million	10.9	46
Dhaka	160,000	176,823	11	9.0 million	50.9	10
Ho Chi Minh City	236,433	337,500	43	5.3 million	15.7	32
Jakarta	312,168	564,527	81	9.0 million	15.9	31
Karachi	830,366	1,280,000	54	13.5 million	10.5	47
Kathmandu	92,600	119,891	29	1.1 million	9.2	54
Manila	719,878	794,827	10	12.4 million	15.6	32
Phnom Penh	27,387	62,970	130	1.0 million	15.9	31
Shanghai	1,753,190	2,909,053	66	10.5 million	3.6	100
Vientiane	22,273	36,121	62	0.4 million	11.1	45

<sup>a</sup> Based on five persons per household.



and is under 50% in 8 of 11 cities. It is time for all concerned to have a good look at what is going on. Shared connections, neighborhood resale of water, vended supply of water, standpipes, and intermittent supply are not good enough. It is time for Asia to set its sights on 24-hour piped water in all homes and design a road map to get there. The first step will of course be to more accurately determine the facts from the field, preferably through an independent public audit of water sources, levels of service, and the number of people not served with piped water.

## B. Sanitation

In the 1980s, the focus was on sewage treatment. More recently, it has turned to wastewater treatment. Everyone would agree, however, that too little is being done to improve urban environmental sanitation, especially considering the rapid urbanization that is taking place in Asia's developing countries. The poor who are living in unauthorized settlements, located on generally low-lying land that is subject to flooding, are the most vulnerable. Hygiene education is needed, but water without sanitation still leaves the poor vulnerable to waterborne diseases. With good water supply as the top priority, there are just not enough funds left for major investments in sanitation. Catch-up is being played in water supply. So, when will attention be turned to sanitation? That question has been asked for the last 10 years and nothing much has happened. Without a doubt sanitation needs more advocacy. Does another epidemic like the cholera epidemic that hit Peru in the early 1990s have to occur before action is taken? When disease strikes, the cost can dwarf the amount that should have been spent on prevention. In Peru, in the first 10 weeks of the epidemic, losses in agricultural exports and revenue from tourism were greater than three times the amount spent on sanitation in the whole of the 1980s. Cities need to provide sanitation services to the entire population. Figure 4.2 shows that on average only 30% of the people in Asian cities have access to sewerage.

*There are many factors to consider in sanitation: these include the needs of people (privacy, convenience, health, etc.), available resources (space, skills, financing, responsible agencies, etc.), and the local situation (climate, soil, surface water and groundwater, traditions, culture, religion, hygiene awareness, proximity of other people, leadership, and institutions). (Pickford, 1995)*

### Water and Sanitation Service Coverage (Problems) in a Nutshell

- There is inadequate reporting of service levels.
- Coverage in terms of 24-hour access to piped water in homes is very low.
- Alternate sources (especially groundwater) are often ignored.
- Intermittent water supplies are the norm in South Asia
- Standpipe water supplies are prevalent in South Asia.
- Little attention is paid to sanitation.
- The urban poor not being served are the main victims.

### Water and Sanitation Service Coverage (Solutions) in a Nutshell

- Compare the number of connections with the number of people.
- Examine the extent of intermittent water supply.
- Examine the extent of standpipe supply.
- Examine on-site sanitation versus sewerage versus treatment.
- Undertake independent professional audits of service levels.
- Analyze root causes of inadequate coverage.
- Promote awareness of the situation among civil society.
- Address as a priority the needs of those with no access to piped water.