

POLICY BRIEF

WATER*

1. PEOPLE'S PERCEPTION

In a survey conducted in Delhi in 2013 about the perception of people regarding the state of basic services, around half (48 per cent) of the respondents reported water availability to be above average (that is, 'very good' or 'good'), while a quarter (26 per cent) rated it as either 'very poor' or 'poor'. Regarding change in water availability over the last three years, 26.3 per cent felt it had improved and only 9.8 per cent felt that it had deteriorated, the rest being of the opinion that it had remained more or less the same. Thus while there is satisfaction regarding improvement in the supply of water among the citizens, full satisfaction is a long way off, since more than a quarter of the people surveyed are very dissatisfied.

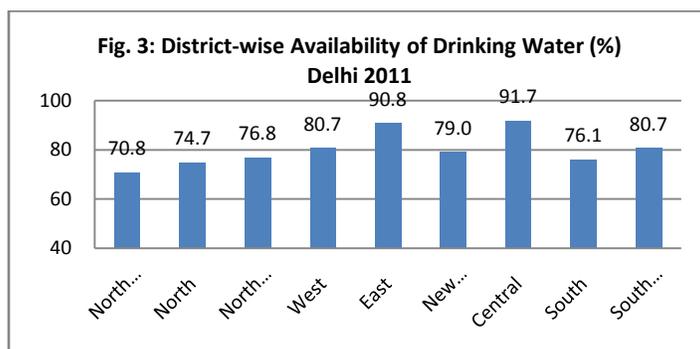
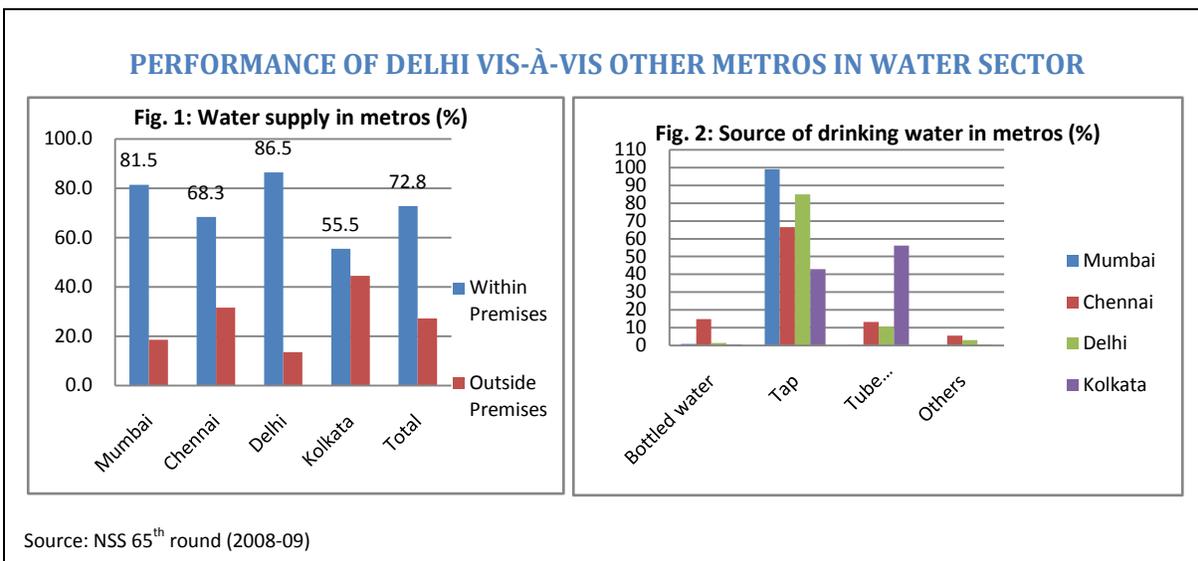
2. AVAILABILITY

In 2011, around 81.3 per cent of Delhi's population received piped drinking water supplied by the Delhi Jal Board, while the residual population accessed water from hand-pumps, tube-wells, wells, rivers, canals, etc. The situation reflects an improvement since 2001, when 75.3 per cent of Delhi's residents received DJB supply. The expansion in the coverage of drinking water supply took place despite a sharp increase in the number of households in Delhi over the period 2001-11 (from 2.55 million in 2001 to 3.34 million in 2011).¹ However, disparity in access measured in terms of the distance to the source of drinking water shows only a marginal improvement over the same period (Census, 2011). Delhi has performed well vis-à-vis other metropolises in supplying water to its citizens (Figs 1 and 2).

While the aggregate water situation has improved over the past decade, the distribution of water is not equitable across districts, with the peripheral areas receiving lower

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volumes per resident especially in the North, North-west, North-east and southern districts (Fig. 3). The Perceptions Survey, 2013 also reveals a disparity among districts in terms of satisfaction with water availability. In the North-west and South-west districts, residents were found to be most dissatisfied with the availability of water, while in the east and New Delhi districts, residents rated water availability as high.



Source: Census, 2011.

3. THE SLUM SITUATION

The disparity in access to water is highlighted as we look at the situation for slums. Among the households living in slums, only 51 per cent have access to water supply within the premises (2011). Although the number of households and population living in slums has declined in the last decade, from 0.42 million slum households (with a population of 2.15 million) in 2001, to 0.384 million households (with a population of just over 1.9 million) in 2011, the numbers are evidently quite large. The unauthorised colonies, and regularized unauthorised colonies, in particular, have cited water problems as a major problem in their areas. Jhuggi Jhompri Clusters, too have rated water availability as 'poor' or 'very poor' in the 2013 Perception Survey. While the poor and under-privileged in Delhi receive subsidised water, it comes at a price, in terms of time and cost. Hours of waiting in queues at water points and fights around water tankers are a common sight in the slums of Delhi.

4. DEMAND-SUPPLY SCENARIO

The continued influx of people into Delhi creates an ever-rising demand for drinking water, which cannot be met by the existing production facilities. The total water supply from all sources in 2010 was around 845 MGD (million gallons water per day), including 745 MGD of surface water and 100 MGD of ground water. The total requirement in 2010 was 1080 MGD, implying a shortfall of 235 million gallons per day. In 2011, the shortfall was less at around 165 MGD. On the basis of a projected population of 19 million and the DJB consumption norms of 60 GPCD, the water supply requirement is projected to be around 1140 MGD by the end of the Twelfth Five Year Plan.²

4.1. Challenges in Water Supply: Quantity

Deficits in the availability of raw water, the fast depleting groundwater and leakages from supply pipes are some of the main challenges faced by the DJB when tackling the increasing demand for water. The districts in South and South-west Delhi are worst affected by lowering ground water levels (below 20-30 meters from the ground level). DJB estimates a distribution loss of around 40 per cent of the total water supplied resulting from leakages alone.³Seven out of the nine revenue districts are reported to be

precariously placed in terms of the availability of groundwater. The South and South-west districts have been declared as Notified Areas wherein there is to be no more extraction of groundwater. East, New Delhi, North-east, North-west and West Delhi districts have also been declared as 'over-exploited areas' by the Government.

4.2. Challenges in Water Supply: Quality

Poor quality of drinking water emerges as a major issue for Delhi-ites, as reflected in the 2013 Perceptions Survey, which reports that nearly half (47 per cent) of the respondents faced problems related to water quality in their daily lives. In terms of localities, a higher proportion of respondents from the Walled city (76 per cent), JJ Clusters (59 per cent) and urban villages (56 per cent) reported issues with water quality. The Focus Group Discussions corroborate these findings (Box No. 1).

Box No. 1: Findings from Perceptions Survey, 2013

In low-income localities such as the JJs, JJ Resettlement Colonies and unauthorised colonies, there are issues regarding water supply as well as water quality.

- The Delhi Jal Board's piped water has not reached some JJs covered in the FGD sample as well as many households in one regularised unauthorised colony. Some households depend on community stand-posts and some need to travel far to fetch water.
- Even in the areas where DJB water is available, there were issues cited regarding poor quality and severe shortages during the summer months. The seasonal water scarcity often led to fights colonies and sometimes people had to resort to buying water. Some of the better-off families augmented water supply from borewells where the cost had to be shared by the beneficiaries.
- Even many authorised colony residents cited issues about the quality of water including dirty water and foul-smelling water.
- Shortage during summer was a common complaint and some respondents reported that water bills were irregular and inflated.

4.3 Challenges in Water Supply: Tariff and Revenue

Raising resources to carry out the necessary investments in the water sector is of crucial importance. DJB has incurred huge revenue losses in the past due to unmetered connections, which constituted about 20 per cent of the total connections in 2011-12.⁴The tariff, while having a volumetric structure, that is, 'pay more as you use more', also provides a high subsidy for poor consumers consuming up to 20 kl per month, and free water for connections with monthly usage up to 6kl consumption. Till recently, the DJB did not have accurate estimates of the volume of raw water going for treatment and treated water available for distribution, and consequently could not estimate losses. Bulk meters have now been installed at water treatment plants to arrive at accurate estimates of the water supplied to consumers with consumption norms being applied for those without functional meters. Consumers are now also allowed to buy meters from the open market.

While the Perceptions Survey, 2013 showed that on an average, 80 per cent of the respondents across all the districts pay water bills, the incidence of non-payment of bills was very high in the JJ clusters, wherein 69 per cent of the respondents reported not making any bill payments. The non-payment would be partly due to the fact that two-fifths of the residents in these JJ clusters lack piped water supply.

5. GOVERNMENT INITIATIVES

The DJB has been meeting its operating expenses since 2010-11 and has financially been in a position to invest in the water sector, as required.⁵Yet, equity in the distribution and access to water remains a challenge, with the peripheral areas of Delhi facing a disadvantage, and the persistence of quality-related problems, especially in the distribution network. Various recent government interventions include demand management through tariff structures, and metering, reductions in leakages and containing of the demand for water by raising awareness about water conservation. Water conservation ratings can also help in assessing the efficiency of water use. A move from intermittent to continuous water supply is expected to improve ratings in Delhi.

The initiatives undertaken during the Eleventh Five Year Plan period,⁶ for reforms and capacity additions in the water sector include:

- One water treatment plant has been constructed and two more are being built.
- Three waste water recycling plants have been made operational and one is being built.
- The Sonia Vihar Water Treatment Plant with a capacity of 140 MGD has been made functional, resulting in improved supply in East and South Delhi.
- DJB has attended to the replacement of corroded and outlived pipes, reducing water supply leakage. Trunk mains near water treatment plants have been replaced by superior quality pipes and new meters have been installed.
- Rainwater harvesting is being promoted and subsidy is being provided by the Government for the installation of such systems.

Box No. 2: Yamuna Action Plan

In order to address water quality issues, Yamuna Action Plan-I (YAP-I), one of the largest river restoration projects, covering Delhi and some parts of Uttar Pradesh and Haryana, was initiated in 1993 as part of a joint effort by the Governments of India and Japan. However, cleaning the Yamuna remained an unfinished agenda under YAP-I and threw up the need for active people's participation. YAP-II focused on building new sewage treatment plants and expanding the capacity of old plants in order to address the most polluted stretch in Delhi. It also brought in NGOs to work at the community level on themes such as the socio-economic upgradation of the Community Toilet Complexes (CTCs) and the adjacent neighbourhoods, along with school health and hygiene programmes, etc. Now YAP-III has been approved for implementation of the selected projects by DJB, involving a total cost of about Rs.1657 crores.¹

The Government's adoption of the *bhagidari* or citizens' partnership approach for the provisioning of basic services has seen the involvement of Resident Welfare Associations (RWAs) in raising awareness about water conservation, water harvesting, and

distribution of water through water tankers. Delhi's citizens have been enabled to pay water bills through the 'Jeevan' centres opened by the Government since 2009. These centres, which number more than 520, are open all day and are closed only during three national holidays.⁷

The Delhi Government has adopted a ten-point strategy for comprehensive reforms in the water and sanitation sector in its approach to the Twelfth Five Year Plan, (Box No. 3).

Box No. 3: Mission Statement of the Delhi Government for the Twelfth Plan¹

- Potable & Safe drinking water to all residents of Delhi.
- 24x7 uninterrupted water supply in some pilot areas and more equitable distribution in the entire NCT.
- 100 per cent BIS Standard Water Quality to be made available to all consumers.
- Promotion of rainwater harvesting, groundwater recharge, regulated and controlled groundwater exploration.
- Complete measurement of water supply and distribution network at all levels with a 100 per cent metering system.
- Higher standards of treatment for wastewater.
- Use of treated waste water for all non-potable purposes.
- 95 per cent of total sewage generated to be collected, treated and disposed through an interceptor sewer and normal sewage treatment network.

6. POLICY DIRECTION

- (i) For achieving equitable distribution of water, the DJB coverage must be fully extended to slums within their household premises.
- (ii) There is need for demand management by changing social attitudes towards the use and conservation of water.
- (iii) The Government's ongoing initiatives for rainwater harvesting should be continued and, in fact, accelerated, leakages from pipes reduced, regulation of

groundwater use by deepening lakes, dams, reducing the number of tubewells undertaken, and more water treatment plants built. In this regard groundwater drawl charges and metering can be an option.

- (iv) Adoption of decentralized wastewater treatment may be made mandatory with reuse and recycle of treated wastewater in horticulture, cooling, flushing, etc. by individual units such as hotels, hospitals and shopping malls.
- (v) In order to improve the quality of water, the target of the Twelfth Five Year Plan to supply 100 per cent BIS standard water quality to all, needs to be adhered to.
- (vi) In order to raise revenue for resource generation, the Twelfth Five Year Plan proposes 100 per cent metering and reduction of non-revenue water level to 30 per cent.

Endnotes

- ¹ Census estimates available at: [http://delhi.gov.in/DoIT/DoIT_Planning/ES2012-13/EN/ES_Chapter per cent202.pdf](http://delhi.gov.in/DoIT/DoIT_Planning/ES2012-13/EN/ES_Chapter%202.pdf) accessed on 17th May 2013.
- ² Approach to the Twelfth Five Year Plan available at <http://delhi.gov.in> accessed on 17th May 2013
- ³ http://delhi.gov.in/DoIT/DoIT_Planning/ES2012-13/EN/ES_Chapter13.pdf accessed on 17th May, 2013..
- ⁴ Delhi Economic Survey, 2012-13.
- ⁵ The discussion here draws from the presentation made by Ms D. Mukherjee, CEO, Delhi Jal Board at the Stakeholders' Consultation organized by IHD on 8th July, 2013 at New Delhi.
- ⁶ [http://delhi.gov.in/wps/wcm/connect/DoIT_Planning/planning/important+links/an+approach+to+12th+five+year+plan+ per cent282012-17 per cent29](http://delhi.gov.in/wps/wcm/connect/DoIT_Planning/planning/important+links/an+approach+to+12th+five+year+plan+per+cent282012-17+per+cent29) accessed on 18th May 2013
- ⁷ *Source:* <http://www.governancenow.com/gov-next/egov/it-brings-delhi-govt-services-citizen-s-doorsteps> accessed on 20th May 2013.

Project on “Human Development in Delhi: Status, Analysis and Policy Options” under the Delhi Chair on Human Development Issues, GoNCTD & Planning Commission –UNDP *Human Development: Towards Bridging Inequalities (HDBI)*