

Water Situation in Gurgaon

- Normal annual rainfall in Gurgaon district is about 600mm, most of it during the monsoon season. Conservation of water for year-round use is a critical activity.
- Currently, Yamuna is a chief source of water in Gurgaon.
- There is adequate amount of raw water available in the two water canals (GWS channel and NCR channel). However, Gurgaon lacks adequate supply of drinking water due to lack of adequate number of water treatment plants, storage facilities, and distribution network.
- There are two agencies supplying water in Gurgaon, depending on the administrative divisions: 1. Public Health and Engineering Department (PHED) - responsible for the old city area (municipal limits). 2. Haryana Urban Development Authority (HUDA) - takes care of the new city.
- The two agencies seem to share a symbiotic relationship. Raw water sourcing and treatment is the overall responsibility of HUDA. While the HUDA sectors receive water directly from the Authority, the PHED gets bulk water transfers from HUDA for supply in the old city limits. It also supplies most of the piped water in Gurgaon (piped systems are owned by HUDA).
- Rain Water Harvesting is taken up as a municipal-level initiative by MCG - master plans are prepared with support from Jamia Milia Islamia University.
- Sewage treatment is not yet a priority - Najafgarh canal has been reported as a drain for all of Gurgaon's water.

Urban Water and Sewerage in Gurgaon- Issues

- Water:42% gap in water demand (184 MLD) and supply (107 MLD) met through extraction of groundwater.Close to 86 MLD groundwater extracted from over 30,000 bore wells in the city.Rise in % of water demand met from groundwater from 6% to 70% since 2005-06. Despite a CGWB ban on groundwater extraction in 2000, the

	<p>water table continues to fall at alarming rate. A recent study showed that the water table depleted by approximately four metres between June and October 2012.</p> <ul style="list-style-type: none"> • As far as sewerage is concerned, official numbers estimate 80MLD sewage generation, while other estimates are at 130MLD.50-60% of the sewage is reported to flow through Najafgarh drain and then to Yamuna. A CSE study has questioned the quality of treatment, hinting that untreated sewage could be flowing into the Yamuna. The rest, left on open land, seeps into the ground and contaminates the groundwater.
<p><u>Impact of Scarcity of Water and Competition for Allocation of Water</u></p>	<p><u>Environmental</u></p> <ul style="list-style-type: none"> • Drying water sources • Disruption of natural habitats <p><u>Social</u></p> <ul style="list-style-type: none"> • Increased out-migration from water-scarce places • Increased pressure on a few urban centres • Self-perpetuating process that results in more water transferred to the few urban centres • Increasing conflicts over water <p><u>Economic</u></p> <ul style="list-style-type: none"> • Rising costs of water as an input to economic processes
<p><u>Lessons from Chennai</u></p>	<p><u>Situation in the city-</u></p> <ul style="list-style-type: none"> • Severe water shortage had always plagued the city, despite it receiving abundant rainfall and being flooded during rainy seasons. • More than 30% of the city's water demand was met through groundwater, sourced from as far as 40km away from the city. • Sea-water ingress was observed to be significant, due to excessive extraction of groundwater. • Peri-urban to urban water transfers were rampant, sometimes sparking disputes within the surrounding communities. • Managed groundwater recharge

	<p>(through construction of percolation ponds & recharge pits, and making RWH mandatory for various categories of buildings), and reduction in water leakage /pilferage have resulted in alleviation of some of the water problems.</p> <p><u>Lessons learnt:</u></p> <ul style="list-style-type: none"> • Well-defined and authoritative regulatory institutions are essential for: • Monitoring compliance to principles of Transparency, Accountability, and Participation, in Policy-making, decision-making and grievance redressal. • Assigning and monitoring responsibilities of various stakeholders including governing agencies and the beneficiary population. • Building capacities of governing agencies to appreciate and address multi-dimensional issues. • Systems to collect and analyse data/ information are essential.
<p><u>Basics of Water Replenishment: An Initiative of Coca-Cola India Water Replenishment Program</u></p>	<ul style="list-style-type: none"> • There are three core elements to waster replenishment- a. it should be community-based; b. should be water-related and; c. should offer partnering opportunities. • The four major categories of water replenishment are – a. Access to water and sanitation; b. watershed protection; c. water for productive use; d. education and awareness. <p><u>Access of water and sanitation consists of four further activities-</u></p> <ul style="list-style-type: none"> • Water Access: Provisions for Safe Drinking Water Supply (Wells, Hand pumps etc.) • Water Distribution: Safe water storage (Water distribution pipes, and stand Posts) • Water Purification: Purifying water at the point of consumption (Water Filters etc.,) • Sanitation: Pit latrines, boy and girl facilities at schools, hand washing and awareness raising. <p><u>Examples of watershed protection-</u></p> <ul style="list-style-type: none"> • Agricultural land practice changes which includes such practices as drip

	<p>irrigation and Laser Levelling.</p> <ul style="list-style-type: none"> • Surface water management with proper renovation of ponds and building and maintenance of check dams. • Wastewater treatment for productive use include urban sewerage refuse. • Rainwater harvesting and aquifer recharge. • Roof Water Harvesting. <p>A successful recharge pit at SOS School, Bawana, Delhi was built in 2008. The roof water harvesting area for this pit is around 26,000 sq.km and it recharges about 9,744 m3/year.</p>
<p><u>Way Forward</u></p>	<p><u>Strategic steps-</u></p> <ul style="list-style-type: none"> • Establishing through comprehensive studies, the principles and guidelines for conservation of water resources • Holding transparent multi-stakeholder dialogue for incorporation of the principles and guidelines in working plans for water resource conservation • Translation into practice the principles and guidelines for all sectors of water use categories: design of water conservation norms and standards • Evolving a roadmap for water conservation in urban sector <p><u>Short-term action plan-</u></p> <ul style="list-style-type: none"> • Project water demand and supply gap • Assess investment requirements • Build capacities and systems to address the requirements • De-politicisation of water tariff: 'RPI-x' could be a basis for auto tariff revisions. <p><u>Other steps-</u></p> <ul style="list-style-type: none"> • Sensitizing & Mobilizing the Citizens for active participation towards Water Management which includes two steps- demand management (water conservation) and supply management (source augmentation). • Encouraging rain water harvesting. This process involves roof water and ground water harvesting. The collected water gets transferred into a storage system from where it is used to replenish the groundwater table. • Metering should be taken up in

	<p>earnest. CRESCENT manufactures meters approved by HUDA and Delhi Jal Board and internationally partners with B Meters to produce quality products. Metering encourages better conservation practices.</p> <ul style="list-style-type: none">• Man-made lakes, like those in Bhopal and Udaipur, can be made in several locations on either side of the Aravalli ranges in Gurgaon. On the other hand, a few water bodies (bunds) that still remain in the city are gradually becoming waste dumps. These need to be saved and replenished by having a protective boundary and making sure they tap the rainwater.• Total recycling of sewage water from Gurgaon and other towns will also indirectly save the ground water from further decline. Sewage flow of Gurgaon is about 100 cusecs, which can be utilized for irrigation of 10,000 acres, which will further save water drawn from 1000 tube wells• Unlike the making of three Gurgaon Master Plans in quick succession, any development plans of towns should be prepared for a minimum period of 20 years and should not be revised frequently. Availability of water should be the most important factor determining the size of a development plan.
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