

Major Problems Faced by the people of Delhi:

1. Environmental Problems:

Air Pollution:

The respirable suspended particulate matter (RSPM) in the Capital's air is touching 250 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), four times the prescribed level, while the concentration of nitrogen oxide (NOx) is 50-55 $\mu\text{g}/\text{m}^3$ - way above the permissible upper limit of 40 $\mu\text{g}/\text{m}^3$.

Water Pollution:

A 2008 report by the Central Pollution Control Board (CPCB) on status of water in the country finds that the Total Coliform and Faecal Coliform numbers are highest in river Yamuna with a count of 32X10⁷ MPN / 100 ml and 23X10⁷ MPN / 100 ml respectively against a bathing quality standard of 500 MPN / 100ml.

Given the indisputable presence in the river of bacteria, viruses and protozoa that cause diseases, the rising morbidity caused by waterborne diseases in Delhi can certainly be blamed on the river getting sicker.

Land Pollution:

NEERI estimates indicate that about 8000 M. Tonnes of Solid waste is being generated each day in Delhi at present. In addition, industrial hazardous and non-hazardous waste, such as fly ash from power plants, is also generated. MCD and NDMC could manage to clear about 5000-5500 M. Tonnes of garbage each day resulting in accumulation of garbage in the city area.

2. Health Related Problems:

- Trucks contribute about 65 per cent of the total particulate matter (PM) concentration in Delhi's air. The lack of any effective regulation on trucks entering the city after 10 pm has led to the current situation. Despite a Supreme Court directive to keep the trucks out of city limits, the enforcement remains poor. As a result, the pollution level in Delhi today is as bad as it was in the pre-CNG days, exposing residents to serious health problems such as respiratory and pulmonary diseases.

- High Respiratory Symptoms have been noted in 32% children examined in Delhi compared to only 18.2% of rural Children. The Symptoms are higher during winter.
- Lung function has reduced in 43.5 per cent schoolchildren, deficit hyperactivity disorder is 4.1 times higher among schoolchildren of Delhi than the rest of India.

3. Socio-Economic Problems:

1. Urban Sprawl
2. Overcrowding
3. Housing
4. Unemployment
5. Slums and Squatter Settlements
6. Transport
7. Sewerage Problems
8. Urban Crimes

Water Scarcity Problem in Delhi

According to World Bank experts, the next war among neighbouring countries and cities worldwide will be for “water” and this is a scenario the experts have predicted to take place by 2020. But in reality, in Delhi, the national Capital, the war over water has already started. There has been a continuous war going on between Delhi and Haryana regarding the sharing of water between the two States but nothing has been officially finalised. The national Capital has been facing severe water scarcity for a very long time, and now things are worse.

Why there is water scarcity in Delhi?

Supply side problem:

- Water wastage and loss while transportation from other states in canals which use the river Yamuna as the source.
- The Delhi Jal Board is to be blamed as it has not been able to keep its infrastructure and equipment in better condition. Most of the water, around 52%, gets wasted due to leaks in the pipelines of the DJB.
- Also, distribution of water haphazardly, loss of water in transmission and distribution, unauthorized use of water and unmetered water supply have all contributed towards water shortage in the Capital.
- In fact, Delhi Jal Board (DJB) who is responsible for water supply and management has not been able to arrange proper distribution of water. Most parts of the city have no piped connections. Various localities depend on tankers.
- Ground water affected due to increase in pollution.
- Covering soil prevents water percolation to these underground reservoirs in the city.
- Poor water treatment.
- Delhi is land locked. Has to depend on secondary sources for water.
- Lack of a proper pricing system for water which would prompt a judicious use of the resource.

Demand Side Problem:

- Over population. Too much water demand.
- Biased demand based on different sects of the society.
- Failure to realise water as a resource and not as a commodity. Spending on water should be frugal but not miserly.
- Improper classification of water to be used. For example treated sewage water can be used to water than tap water.
- Industrial and household appliances
 1. Use of fully automated washing machines increase use of water
 2. Use of dishwashers
 3. Use of water purifiers like the RO which waste a lot of water(70% wasted)

4. Increase in industrial demand for water due to increase in production which is again due to increase in population.
5. Industries look to increase the profit thus exploiting water resources for a much efficient process.
6. Poor waste water treatment by industries.

Solution:

Administrative:

- Taking measures to make the operations of the sewage treatment plants functional.
- Encouraging the use of small decentralized sewage treatment plants to recycle the water
- Encouraging more and more rainwater harvesting. The Government should make rain water harvesting mandatory for all the residential apartments, individual houses, corporate houses and industrial units. Consider the State of Tamil Nadu, Rainwater harvesting is compulsory in every building either old or new. Rules must ensure rain water harvesting is done even in older buildings.
- Check dams can be constructed to ensure supply when there is demand.

Canal Solar Power project:

The Canal Solar Power Project is a project launched in Gujarat, to use 19,000 Kilometre long network of Narmada canals across the state for setting up solar panels to generate electricity. It was the first ever such project in India. Narendra Modi, Chief Minister of Gujarat, inaugurated a 1 Megawatt (MW) pilot project on 24 April 2012. The project is situated on the Narmada branch canal near Chandrasan village of Kadi taluka in Mehsana district. The pilot project will generate 1.6 million units of clean energy per annum and also prevent evaporation of 9 million litres of water annually from the canal. The project virtually eliminates the requirement to acquire vast tracts of land and limits evaporation of water from the 750 meter long canal, tackling two challenges simultaneously by providing energy and water security. Considering the huge water and electricity demand in Delhi, and keeping in mind the huge water losses, implementing such a project in Delhi would benefit a huge number and also provide employment to a lot more.

Singapore Pricing System:

- India is a price sensitive country. Charging for overuse of water is the only way. Water can be conserved from the consumer's side.
- Singapore's water management shows that basic utilities do not have to be under-priced for better access. By integrating ecological costs, the country has improved both security and quality of water while effectively tackling water scarcity and making its water industry more competitive.
- A separate tax rebate on utilities and subsidies targeting lower-income households have been introduced to decouple distributive impacts from over-consumption.

Demand management through water pricing:

1. Integrating ecological costs of water and streamlining the rate based on water use amount:

- The effective water pricing reform starting in 1997 aimed to reflect not only the full cost recovery but also the increasing water scarcity and high incremental costs of additional water supplies.
- The existing increasing block tariff system composed of three tiers, and an exemption of the water conservation tax for the bottom tier (covering 56 per cent of the households with less than 20 cubic metres of water use per month, as of 1997) was transformed into a flat-rate system, which is comprised of two tiers with thresholds of 40 cubic metres per month, in which both the bottom and upper levels pay the water conservation tax.
- At the same time, favoured rates for households over industry and business were abolished to apply the same rate to both entities, only based on their respective water use amount.

- As a result of the four annual increments, the price for water has risen by 120 per cent for households after the price reform in 1997. The average monthly domestic bill including taxes increased from S\$13 in 1996 to S\$30 in 2000.
- Water tariff also provided incentives for water conservation by including a water conservation tax whose proceeds are directly attributed to the government. Sewage tariff (called “waterborne fee”) which consists in a share charged for the maintenance of the public sewage system, are also levied.

2. Decoupling distributive impact from (dis)incentive of over-consumption:

- The reformed water pricing system does not have a lifeline tariff component because it favoured small-size households rather than low-income households and failed to discourage wasteful use of water. Instead of the lifeline tariff or progressive water tariff system, such as an increasing block tariff, adverse impacts on poorer households were addressed in a separate scheme of subsidies and rebates on utility bills (including water, electricity and gas) to decouple the distributive impacts from disincentives on (wasteful) water consumption.
- The U-Save rebate scheme, originally introduced in 1996 to offset an electricity price rise, is reviewed every year to assess the impacts on the lower-income households of the changed costs of living due to increases in water and electricity prices, general inflation and changes in goods and service tax rates. The scheme also addresses in advertent impacts on the lower-income households of economic downturns incurred in economic restructuring or outbreak of epidemics (such as SARS).
- The country’s innovative public housing scheme (HDB housing scheme) made the targeting of beneficiaries relatively easy and effective, considering that more than 80 per cent of the population lives in HDB flats, including low-income households (who cannot afford to procure a house in the private market). The rebate scheme was based on the type (size) of the HDB flat as well as the number of residents. The rebate is credited by Singapore Power Services, Ltd., the country’s billing agent, onto the account of the household utility bills. Households can use the credits to pay their utilities, including water, electricity and gas. Credits not used in the same month can still be used in subsequent periods: this provides stronger incentives to conserve water, energy and gas.