CHALLENGES AND PERSPECTIVES FOR WATER IN MEGACITIES
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KOLKATA (CALCUTTA)
Water in a Megacity - from Scarcity to Plenty

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Kolkata - ‘Chance directed, chance erected’. The British established fort and city in 1690. The French, the Dutch, the Portuguese also came. The city grow on low and marshy land. Population grew very fast. Kolkata (Calcutta) was capital of British India till 1911. Initially water was from pond and river. The first water treatment was established in 1870. Water Supply was inadequate with poor drainage and sewerage. Waterbased diseases were widely known. It was known as cholera capital of India. With partition of India and Bengal refugees came and urbanisation was sporadic.
Kolkata Metropolitan Area consists of 41 municipal located on two sides of river Hoogly, a tributary of river Ganges. It is in monsoon area (with annual rainfall 1200 mm). Streets and low lands are often flooded.
Challenge against decay and degradation in a megacity was taken up in 1960s’ Ford Foundation helped prepare Basic Development Plan for Calcutta (1966)

World Health Organisation helped prepare Master plan for Water supply, sewerage and drainage. The salient features:

- Norms of percapita supply 270 lpcd for Central city, 227 lpcd for other municipal areas and 90 lpcd for semi urban areas.
- Ground water use in northern municipalities and surface (River) water for all others areas.
- Continuous supply for 24 hours. Closure of unfiltered water supply.
- Divided metropolitan area in 5 service district.
- Design population (2001) 14.9 million on 1380 sq km.
Implementation

- Construction of treatment plants
- Booster stations and reservoirs
- Augmentation and renovation
- Extending grid to new areas
- Metering to stop wastage
- Special provision for slum areas
Current problems in Water Supply

- Pockets of scarcity due to rise in density of population and uneven urbanisation
- People depend on private water vendors or wait to get supply from community taps.
- Receding aquifer level, drying of tubewell and ban on sinking of new well but poor people cannot afford new city connection
- Realestate boom. Waterbodies and wetlands are tilled up.
- Secondary water grid layout has not followed urbanisation.
- Political parties protested against pricing of water.
- Abatement of pollution is slow - contamination of water by chemicals - arsenic, lead etc.
- Wastage of water is quite common a lack of awareness.
- Multiple municipalities and local bodies with problems of governance and management of water with different percapita requirement, hours of supply etc.
- During summer months water tanks/ponds became dry but in monsoon months, silted drains are flooded and water logging creates health problems.
- Maintenance of some old facilities is poor.
- Change in life style, economic activities etc.
Vision 2025 plan (prepared in 2001)
Projected population 20.4 million on 1785 sq km.

- 5 more water treatment plants
- Emphasis on secondary grids
- Water metering and pricing
- Stoppage of ground water to depend on surface water
- Rain water harvesting
- Reuse of waste water for Agri-aquaculture
- Purification of river Ganges
- Ban on filling up wetlands
- Pollution abatement - chemical contamination
- More rational supply norms (Govt of India 270,227 and 90 lpcd)
- Responsibility of water distribution to local municipalities with decentralised planning, management and governance.
- Privatization or joint venture encouraged.
- Reuse of waste water encouraged with agri-aquaculture.
THE PROCESS AT KMA AT A GLANCE:

Sewage is channeled

Separation of plastic & metals

Left to compost

Pumped into settlement tanks or allowed to seep through inlets

After sludge settles, the water is allowed to flow into channels where aquatic plants absorb impurities

Water at outlet is pure & suitable for irrigation

Water is purified, fish thrive on phytoplankton, water & air are oxygenated

Nutrient rich water & photosynthesis at shallow depth cause phytoplankton to thrive

Fast growth of leafy vegetables

Urban agriculture leads to green buffer zone, making city a part of the natural ecosystem

Sludge is sometimes added as fertilizer

Solid waste is dumped
Recycling of wastewater for fish production