



RESEARCH BRIEF

REAL ESTATE GROWTH AND ECOLOGICAL CRISIS: THE STORY OF DELHI

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CONCEPTUALISED AND CREATED BY:

- ❑ Akanksha Arora, Chief Executive Officer & Founder Trustee
- ❑ Tanya Chandra, Chief Operating Officer & Founder Trustee

AUTHOR:

- ❑ Tanya Toshali, Research Associate, Urbanisation & Environmental Policies

ABOUT THE ORGANISATION:

LexQuest Foundation (LQF) is an independent, non-profit, research and action organisation, established in 2014, in New Delhi. We are striving to create, advocate and implement effective solutions for a diverse range of development issues.

To endorse participative governance, we engage with a broad spectrum of stakeholders, from various sections of the society, to ensure that policy-making remains a democratic process. We utilize pragmatic and futuristic research to disseminate actionable knowledge to decision-makers, experts and the general public.

Our key activities include capacity and skill-building workshops, policy advisory programs, public outreach, and stakeholder consultations. We collaborate with the government, other organizations and individuals for impactful policy formulation and execution.

By employing sustainable and equitable solutions through our multidisciplinary, intersectional initiatives and programs, we are constantly working towards creating empowered communities.



Real Estate Growth and its Ecological Consequences for Delhi

Delhi has been home to many since the 6th century BCE. It has served as the capital to numerous empires and been the seat of many kings. Today, **the National Capital Territory of Delhi along with surrounding satellite cities of Faridabad, Ghaziabad, Gurugram, Noida, and Sonipat form the National Capital Region (NCR)**. This robust metropolitan region covers a massive 54,984 square kilometers and boasts a population of over 4.6 crores (Census, 2011). Out of this, close to **2.6 crore people reside in Delhi urban, making it the world's third-largest urban settlement**. Along with serving as the Capital of the country, Delhi is also amongst the most productive urban areas in India and has the second-highest GDP per capita.

With so many people living and working in this area, the city has seen massive growth and development in the past few decades. However, these developments have not been equitable or environmentally sound. **The natural resources have been overutilized and polluted both due to the rapid rise in population and the lack of sustainable development policies. The population of Delhi is predicted to rise steeply in the next ten years, putting even more pressure on the already burdened city.**

The real estate sector in Delhi has caused increased stress on the air, water, and land of the area. Delhi is ranked high amongst the world's most polluted cities. A



recent study centered around the rapid urbanization in Delhi used remote sensing and spatial metrics to map out the urban patterns and processes across the nine administrative districts of the city. When comparing the raw satellite data from the 1970s to 2014, we can see just how much the city has grown in terms of the built-up area. **The real estate sector is at the center of Delhi's pollution problem. The unprecedented growth in population and economy has created a demand for large infrastructure and industrial projects that raise threats to biodiversity.** A large part of the growing real estate in Delhi consists of unauthorized colonies, slums, and jhuggi-jhopri (JJ) clusters. These settlements are usually occupied by the urban poor and migrant laborers. There is an immediate need to effectively incorporate these into the mainstream of urban development as **this unplanned real estate comes at the cost of dwindling rural and forest land, rising air pollution, overburdened water resources, failing drainage system, and the generation of an unsustainable amount of waste.** Unauthorized colonies should be regularised as per government policy and be provided with infrastructure development opportunities and adequate facilities for water supply, sewage treatment, waste management, etc. Slum settlements and JJ Clusters need to be converted into resettlement colonies through planned redevelopment aided by the participation of the inhabitants.

To bring harmony between development and the environment, Environmental Impact Assessment (EIA) was made mandatory in 1994 for various categories of



projects. It was further revised in 2006 to make it more efficient, decentralized and transparent. Misadministration by a range of government agencies and regulatory bodies has led to this environmental crisis. Construction projects do not go through the required robust environmental approval process and are largely exempt from public scrutiny. **Large-scale real estate development projects should be subjected to a range of approvals but a majority of projects are given a cursory glance before being approved in a single sitting of the Environmental Impact Assessment Committee. Most of these projects, like shopping complexes, a world trade center, and government training centers, are justified as being built in public interest and hence given special allowances. Recently the Delhi ridge has come under fire by the National Green Tribunal. This ridge is the last stretch of Aravallis and has been heavily encroached upon by residential colonies, university campuses, and religious institutions.** The unique ecological feature helped clean the polluted air, maintain reserves of drinking water, and protect the city from desert sands blowing in from Rajasthan. With the unchecked construction in the area, the ridge has transformed dramatically and is raising concerns for the ecology.

Loss of Green Cover

As the requirement for housing and infrastructure increased, Delhi lost lakhs of trees to construction projects. **More than one lakh trees were cut for the Delhi**



metro and other Public Works Department (PWD) projects between 2006 and 2014 alone. This caused a massive drop in the city's green cover from a minimum of 33% to a mere 10%. The Delhi Development Authority (DDA) recently came out with the Master Plan for Delhi 2021 that focuses on making Delhi a global metropolis and a world-class city. The proposed master plan makes an allowance for 16,000 trees to be felled in place of redevelopment projects across the city. All this is being done under the aegis of the National Buildings Construction Corporation (NBCC) and the Union Ministry of Housing and Urban Affairs. The redevelopment plan has also received the get-go from the Ministry of Environment, Forest and Climate Change. The loss of visible green cover and rising casualties due to deteriorating air quality has sparked protests from citizens and the government has taken some proactive steps to preserve and increase the number of trees in Delhi. Afforestation projects have been developed to compensate for the trees that are being cut for construction of roads, metro lines, and buildings. While this step has resulted in a minuscule increase in the overall forest cover, reports say that crucial 'very dense forest cover' and 'medium dense forest cover' has declined.

Increase in Number of Vehicles

The Delhi Master Plan 2021 also calls for further densification- increasing population per unit of land- as a means to address the city's need for housing,



institutional and commercial space. **The existing cantonments and colonies with their large open spaces and trees are to be replaced by more closely-packed vertical development to make more efficient use of the land** (DDA, 2018). While this plan for vertical development takes up less area on the ground, it has a great ecological impact on the city's traffic and resources. **The real estate densification plan has proposed 10,655 dwelling units in Sarojini Nagar but has also given a corresponding environmental clearance to parking facilities for 83,800 cars. Similarly, 4,882 dwelling units were approved in Netaji Nagar along with parking space for 17,928 cars.** The huge discrepancies in these figures suggest that there is going to be a massive influx of vehicles onto the already choked streets of Delhi. For every parked vehicle there is another car moving across the city, leaving an ecological footprint. These vehicles take up space and emit toxic fumes, exerting an unbearable burden on the city.

Water and Sanitation

With rapid real estate development, the requirement for water and sanitation facilities has also increased exponentially. Delhi has an **average water availability of 225 liters per capita per day but this is not sufficient** to support the growing population. The distribution of water is also not uniform. **The majority of the water supply is dependent on surface water and the rivers Yamuna and Ganga contribute to over 80% of Delhi's total water needs. The Yamuna is the most**



important source of water for the city but it faces extreme pollution. The urban settlements in Delhi are the biggest source of pollution load in Yamuna accounting for close to 76% of the pollutants. The sewage treatment system of the city fails to account for the ever-expanding population and several tons of household sewage and industrial waste is released into the river every day. Along with the surface water, the groundwater in Delhi is also inching towards critical contamination and complete depletion in certain areas. The depletion is caused due to unchecked extraction of groundwater in areas where the surface water supply is not sufficient. With an increase in population, the groundwater levels have declined to anywhere between 2 to 30 meters in different parts of Delhi. Along with the rapid decrease in the quantity of groundwater, the quality is also deteriorating and it has been reported as unfit for human consumption in several areas.

The 2021 Master Plan has made several suggestions to fight the pollution and depletion of water resources in Delhi. Key amongst these is strengthening the sewage treatment and water reuse facilities through new projects and up-gradation of present infrastructure. The Delhi Jal Board (DJB) is making efforts towards laying sewer lines in the unauthorized colonies and urban villages in and around Delhi. Local bodies are also working towards removing slums and JJ clusters from the banks of the river Yamuna. Besides laying of sewer lines and building Sewage Treatment Plants (STP)s, their plan also calls for comprehensive



utilization of treated effluent. The plan also proposes rainwater harvesting to compensate for the estimated deficiency in the water supply. While Delhi has great annual rainwater harvesting potential, the recharge of groundwater is very limited because of the decrease in the availability of permeable surfaces due to rapid urbanization and expansion of built-up space. The rainwater is instead diverted into the sewers and drains. The Trans-Yamuna board has taken up the mantle of development in East-Delhi. This includes development projects at several lakes like Shahdara lake and Sanjay Van lake. While the focus of the board remains largely on the beautification and development of these spots as picnic locations, the ecological merits of the projects cannot be denied.

Urban Waterlogging

Although the lack of sufficient water is a growing concern in Delhi, there is also the parallel issue of urban waterlogging. The National Disaster Management Authority (NDMA) recognizes urban floods distinct from riverine floods. These floods are triggered by poorly planned real estate growth that creates artificial catchments increasing the flood intensity by six times when compared to riverine floods. This causes quick and frequent flooding of urban areas even under moderate rainfall. Delhi's rapid urbanization, extinction of water bodies, deforestation, and encroachment of the Yamuna floodplains has made it susceptible to waterlogging. The city has suffered several floods in the Yamuna



and the Najafgarh drain system and experts attribute this to the irresponsible real estate growth in the area. The study of the natural topography, rainfall, drainage systems, and soil lithology of catchments should be an important part of urban planning but is often ignored by authorities and real estate developers.

Waste Management

Another ill effect of rapid real estate growth is the increase in municipal and hazardous waste. The solid waste generated from commercial and residential areas is around 8360 metric tonnes per day (MTD). This amount is projected to increase with growth in the population. All this waste is disposed of in three landfill sites- Bhalswa GT Road, Ghazipur and Okhla. **Urban centers also produce significant amounts of hazardous waste, biomedical waste, and electronic waste. The growing waste management problem is creating many complications in the capital region with an epidemic of diseases, contamination of landmass and water bodies.** The government has introduced several policies and by-laws to ensure sustainable waste management but both the authorities and the general public remain largely unsympathetic towards the efforts. The Municipal Corporation of Delhi (MCD) is tasked with enforcing the Solid Waste Management Bye-Laws 2018 in all of NCT, under which, **all waste needs to be segregated at the source and the MCD is to provide door-to-door collection and transportation of the segregated waste. However, the public remains largely unaware of this**



policy and its importance. This leads to a majority of houses not segregating their waste. Often, even segregated waste is mixed back together at MCD collection sites and dumped in landfills. Efforts towards reclaiming and redeveloping abandoned and filled landfill sites have been mentioned in Master Plan 2021 but very little work has been done. All this land is wasted real estate and provides no ecological benefits either.

Smart City Initiative

The Delhi Master Plan 2021 outlines plans for the development of smart cities on the outskirts of the NCT. This is to be done by following the **public-private land pooling policy where the government and private landowners come together to form an integrated smart city**. Smart development is heralded as a sustainable solution to the existing urban planning problems in Delhi but the proposed projects are in stark contrast to the reality of urban living. The proposal **does very little towards fighting the fatal air pollution problem in Delhi and instead allocated a large sum to build multi-level automated parking**. There is no mention of disincentivizing private transport or increasing green cover to alleviate air pollution and urban heat islands. After the Supreme Court demanded information on steps being taken to improve air quality and reduce air pollution in Delhi, the **AAP government launched the Green Delhi initiative. The program aims at greening approximately 120 acres of land along roads and under flyovers**. This



project also aims to utilize only treated water from STPs. The government has also **passed the green budget which covers schemes of transport, power, environment, and PWD.** These schemes are aimed at developing a unified system of pollution control to bring down levels of different pollutants. The government also placed a temporary ban on all construction activity in the city, citing the air pollution caused by it. Excavation work, stone crushers, and hot mixers release fine dust into the air that aggravates smog. While this ban was temporary, there needs to be a better system of checks and balances in place to combat the severe smog problem that the city faces every winter. No such guidelines have been mentioned in either the DDA plan or the green budget.

Rapid urbanization caused by population growth and large scale migration has put critical pressure on Delhi's limited environmental resources. As the real estate sector expands to cover the growing needs of the population, the ecology of the NCR is in severe danger. Real estate developers should be held accountable for moderating the detrimental impact of their projects on the environment. **They should be required to use superior green technology like solar energy harnessing, rainwater harvesting, recycling of solid and liquid waste, and energy-efficient heating and cooling systems.** However, the onus for minimizing the negative ecological footprint does not lie solely on the developers - but is also



a responsibility of policymakers, urban planners, various Government bodies, and the citizens.



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