

## **Sustainability in Urban Development: Impediments to Urban India's Sustainable Growth**

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**ABSTRACT:** *"Many cities are caught in a 'perfect storm' of population growth, escalating adaptation needs and substantial development deficits created by a shortage of human and financial resources, increasing levels of informality, poor governance, environmental degradation, biodiversity loss, poverty and growing inequality." - IPCC, 2014* The lines quoted above sufficiently emphasize both the requirement and the importance of sustainability in urban development. This article seeks to provide a scholarly insight into sustainable urban development and discusses the challenges facing India in achieving sustainable urban growth. Finally the article makes a few pertinent suggestions to improve urban development policies of India along the lines of sustainability.

**KEYWORDS:** *Emphasize, Insight, Pertinent, Policies, Scholarly, Sustainability.*

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### **I. INTRODUCTION**

Sustainable Urban Development specifically means achieving a balance between the development of urban areas and protection of the environment with an eye to equity in employment, shelter, basic services, social infrastructure and transportation in urban areas. With rapid expansion of urban population in India there has arisen a wide awareness about minimizing the environmental costs of urbanization. Concerns are raised at environmental damages and depletion of non renewable resources and rising levels of pollution in urban areas. In recent times, Indian cities have become places of urban environmental degradation and wasteful use of resources, which is proving to be costly to generations present and future. So, keeping this in mind we discuss sustainable urban development first and then seek sustainable solutions to different problems of Indian urban development in the sections ahead.

### **II. PART A.**

#### **Sustainability in Urban Development - The concept**

##### **2.1. Urban Sustainability - The Definition**

Urban Sustainability is the idea that a city can be organized without excessive reliance on the surrounding countryside and be able to power itself with renewable sources of energy. Some commentators define urban sustainability from the economic point of view as the potential of a city 'to reach qualitatively a new level of socioeconomic, demographic output which in the long run reinforces the foundations of the urban system.' Others, notably environmental activists, link 'urban sustainability' to broader social principles of futurity, equity and participation, especially involvement of public citizens in the land development process.

##### **2.2. Why sustainability in Urban Development is of paramount importance**

Urbanization has the ability to transform the local and economic fabric of nations. Cities are responsible for the bulk of production and consumption worldwide and are the primary engines of economic growth and development. The dynamism of cities represents a major sustainable development opportunity. By getting urban development right, cities can create jobs and offer better livelihoods; increase economic growth; improve social inclusion; promote the decoupling of living standards and economic growth from environmental resource use; protect local and regional ecosystems; reduce both urban and rural poverty; and drastically reduce pollution. Sound urban development will accelerate progress towards achieving sustainable growth and also help in ending extreme poverty. On the other hand, mistakes made in managing urban growth are very hard to undo. Infrastructure investments, urban land-use systems, and layouts are literally cast in stone - with impacts that may be difficult to alter for many decades. Without adequate management and investments, slums may expand, and cities may fail to generate the jobs necessary to improve livelihood. As a result, inequalities, exclusion and violence may increase. Countries may fail to decouple economic development from resource use, and cities may fail to provide economic opportunities to surrounding rural areas and become vulnerable to climate and other environmental changes. Cities around the world are struggling to accommodate their rising populations and address the multi dimensional challenges of urban development. If current trends continue, few countries stand to reap the benefits of sustainable urban development. Hence, how cities address the challenge is of paramount importance today.

### **III. 3. AGENDA 21 - THE GUIDING FORCE BEHIND THE IDEA OF URBAN SUSTAINABILITY**

Agenda 21 of the Earth Summit addresses the idea of 'sustainable development' of cities. It mandates concrete planning and also implies abstract concepts that should guide the planning generally. The 'concrete plans proposed in Agenda 21 include equity, entrepreneurship, technology transfer, access to land, security of land tenure, tenants' rights, liberalized credit policies and low-cost building material programs to 'sustainable' urban living for the homeless and for the urban poor. It asks developing countries to foster small businesses in the informal economic sector and developed countries to provide developing countries monetary and technical aid. Within nations, wealthy districts are asked to provide clean water, sanitation, and waste collection services to poorer ones.

Agenda 21 also proposes a number of tangible strategies like appropriate technology, transport reform and urban renewal. Governments are asked to improve slums and also to build cities invulnerable to natural disasters. National construction programs using local and non-polluting technologies are also encouraged.

In terms of planning principle, however, Agenda 21 introduces paradigm of urban development. This paradigm actually relates to bringing sustainability to city planning practice.

### **IV. THE 3 PILLARS OF SUSTAINABILITY**

The paradigm of sustainable development in cities rests on three pillars. These pillars are 'economic sustainability', 'social sustainability' and 'environmental sustainability'.

- **Economic Sustainability** - It implies a system of production that satisfies present consumption levels without compromising future needs. It entails restraining resource use to ensure the 'sustainability' of natural capital. In planning practice 'economic sustainability' is to fashion a method of urban design that meets the urban service needs of the general public, particularly the urban poor, while enhancing the naturalness of the urban environment.
- **Social Sustainability** - Social sustainability implies a system of social organization that alleviates poverty. In planning practice the theory of 'social sustainability' calls for economic growth constrained by the requirements of social equity. In order to link these, an enabling environment must be created that optimizes resource use, prioritizes resource allocation, and fosters equitable resource distribution.
- **Environmental Sustainability** - It requires maintaining natural capital as both a provider of economic inputs and an absorber of economic outputs. In practical terms, the theory of 'environmental sustainability' suggests a planning process that allows human society to 'live within the limitations of the biophysical environment.'

### **V. PART B.**

#### **Problems plaguing the Urban Indian Development Story and Sustainable Solutions in line with Agenda 21 and the 3 pillars of Sustainability**

##### **5.1. Indian Urban Development - A tale of growth with barriers**

The urban and rural areas in India have shown simultaneous and similar growth, with the urban population growing more rapidly than the rural population. In 1960, the urban population of India was over 80 million, which was less than a quarter of the rural population. In 2013, this number increased to 400 million, which was almost half the rural population. In the 1970s, the urban population of India experienced an abrupt growth rate that rose to a high level of 4% which was largely attributed to massive public sector investment and rapid urbanization. Since 1980, the urban and rural population growth rates of India have started to decline. Although the urbanization in India has brought growth for its urban and rural population, the obstacles in social mobility and the popularity of squatter developments have limited the population growth and the improvement of living standards in the country. India has slums that are pervasive and have migrated from rural to urban areas. As a result, social sustainability remains a sensitive issue in the context of the traditional hierarchical system in India although its urban and rural populations appear to be changing stably.

##### **5.2. Following are a few problems plaguing the Indian Urban Development and sustainable solutions to the same in line with Agenda 21 and the 3 pillars of sustainable development:**

###### **5.2.1. Two India -The unequal urban growth problem:**

India with its 30 states and seven union territories displays great regional disparities in terms of economic growth and specialization. In India, fast growth states or areas have skipped steps in the economic development models and focused where they have comparative advantage, according to a 2006 IMF working paper. That is, leading regions like Delhi, Karnataka (Bangalore) and Maharashtra (Mumbai) which embraced the IT wave with their first-tier cities, have realized faster growth and rising incomes alongside better infrastructure offerings. Conversely, slow growth or lagging regions - Bihar, MP, and Rajasthan and UP - suffer

with growing poverty, less educated populations, which are expected to follow more traditional economic growth and development patterns.

Solution - In line with Agenda 21, an antidote for both fast growth states attracting most of the foreign investment - in dynamic cities such as Delhi, Mumbai, Bangalore and Chennai - and lagging states, may be a new approach to private investment in infrastructure. As a new form of public-private partnership, global capital markets can offer a viable source of funds, promote better governance, and bring transparency to infrastructures' complexities. With India ready to further embark in public - private partnerships for infrastructure projects, getting the formulas right is imperative. This can make the difference between further regional divergences and politicization which deters reforms and development, and the opportunity for more balanced growth for those who will need it most.

### **5.2.2. Problem in providing urban basic services –**

In order for a city or urban area to be sustainable it needs to produce and manage basic services like water, waste, energy and transportation in a way that conforms to the principles of sustainable development. Indian cities are characterized by high density of population, deficiency in services and air pollution. In urban India in 2001, 69 per cent of households had safe drinking water, 61 per cent of the households had their latrine facilities within their houses and only 35 per cent of the households had closed drainage facilities (Census 2001). 88% of the urban households had electricity and only 0.2 per cent had solar energy in 2001(Census 2001).

Solution - Densities of Indian cities are very high. Management of the basic services should be done keeping in mind the deficiency in the services, the environmental impacts and the inequality in the provision of services. Thus we have two issues here the first one is covering the deficiencies in services in an environment friendly way. Thus alternative options are needed which address the specific problem areas. Hence some specific basic service problems and solutions are provided below.

- Management of waste - Waste management practices should be started from the production and distribution stages of economic activities through reuse and recycling. Reuse of things like metals, glass, paper, plastic, textiles, organic waste and water will reduce demand for energy and raw materials, fertilizers and fresh water sources. However, care should be taken that hazardous wastes do not go for recycling. Plastic should be used less. As such the department of environment of the government of India recommended that other 'best practices' in waste management should be adopted in a large scale. The practices include vermiculture, pelletisation, aerobic composting and so on.
- Energy management - Energy management practices should be encouraged in the planning of buildings and the city form. Buildings and city forms that are energy efficient and use sustainable energies like solar and wind energies should be considered. There are fragments of evidences in India of settlements using solar power, water recycling techniques and waste management practices. But in general the environment friendly techniques are yet to be practiced in urban areas, especially in large cities where the difference would be felt. City forms should be such that it uses energy efficient transport.
- Managing inequality- Management of basic services in the cities should reduce inequality in services between rich and poor. The concept of commercial viability does not hold for social services always. City form should take into account social conditions also. The ability of the urban poor to pay for the full cost of water supply would remain low in India.
- Management of transportation and mobility systems - Traffic is one of the major development problems of major cities of India and a major contributor to green-house gas emissions. The development options to ease traffic include mass public transport, increased car-centric road transportation and shared economy solutions. Mass transit public transport has higher up-front costs in terms of initial infrastructure investments and service integration with existing transport options, although these costs can be mitigated through innovative approaches such as bus rapid transit. Finally, there is a growing recognition of the potential benefits of shared economy solutions such as car pooling and bike schemes that can save costs and protect the environment. The lack of an integrated and efficient public transport system, meanwhile severely hampers mobility and accessibility to social and economic activities, while also increasing pollution, traffic hazards and costs to deliver public services. The challenge for Indian cities is to overcome the short-term infrastructure investment costs of efficient mass transit systems, which requires political will, effective planning and implementation and access to suitable financing.
- Water management- The effect of climate change on water supply will be negative in almost all the countries. Thus, care should be taken that energy efficient alternative systems are innovated. As for efficient practices, water consumption can be limited by using raw water, recycled water for gardening and landscaping. In developing countries the main challenge is to provide drinking water to all the urban residents adopting sustainable water management practices. Rainwater harvesting has its possibilities for partially managing water supply. It has been considered as an optional reform under Jawaharlal Nehru

National Urban Renewal Mission (JNNURM) in India. In Delhi itself, one after another marshlands and water bodies are being converted into residential areas, garbage dumps, petrol pumps, and so on, the latest victim being the Jahangirpuri Marshland. Marshlands recharge ground water substantially. Much is yet to be done regarding this in India and other environmentally sustainable methods can be explored.

- Urban health-Urbanization is an important demographic shift worldwide. Today, nearly 50% of the world population is urban. India's urban population of 300 million represents 30% of the population. Government of India started urban health planning in the 9th Five Year Plan document (2003). An urban slum growth rate of 5% is causing serious concern for the civic and health authorities in municipalities and towns. Health of urban poor and its implications on the entire urban population should be analyzed and an appropriate urban health policy should be arrived at.

A few recommendations can be provided to improve the conditions in the health sector:

- i. Ensure availability, equity and quality of health services. Provide basic healthcare to urban poor.
- ii. Promote social health insurance in low cost subsidized packages.
- iii. Scale up funding in urban health.
- iv. Improve management and accountability of public health services.
- v. Ensure quality improvement through standards and accreditations.
- vi. Ensure that Corporate Social Responsibility initiatives play an active role in health facilities.

- Housing for all-India, like most major emerging economies, has been witnessing accelerating urbanization. According to estimates; around 600 million people are expected to make urban India their home by 2031, a whopping 59% growth over 2011. As an increasing proportion of India's population starts participating in its growth story, it brings with it mounting pressure on the existing infrastructure, which needs to at least keep pace with the growing demand, if not be ahead of the curve. The current housing deficit in India stands at 19 million units, which, in the absence of any meaningful intervention, is slated to double to 38 million units by 2030.

The lack of available housing options, combined with limited income and minimal access to home finance for low income borrowers, means that millions of Indian households currently live in cramped, poorly constructed houses/slum areas/shanties. They lack access to a clean and healthy environment, with even basic amenities such as sanitation, clean water, sewage, waste management and electricity often absent. Thus, 'Affordable Housing' is an idea whose time has come, and sooner rather than later, planned sustainable urbanization will have to be by default and not by choice.

In India, it is appropriate to define affordability in housing as being a function of three broad parameters - the monthly household income (MHI) of prospective buyers, the size of the dwelling unit and the affordability of the home buyer (the ratio of the price of the home to annual income or the ratio of EMI to monthly income). First and foremost, the Affordable Housing customer seeks a strong value proposition. Limited income and difficulty in access to credit mean that a home will most likely comprise the most important asset/biggest investment in his/her lifetime, and will form the starting point for the long-term welfare of his/her family.

### **5.2.3. Land:**

Urban India is plagued by shortage of housing facilities and scarcity of land for social overheads like roads, footpaths, parks, schools and so on. The roots of these problems can be found in the inadequate, inefficient, iniquitous land policy of the country.

Solution- National Commission on Urbanization of India (NCU, 1988) recognized the need for adequate supply of land, efficiency and equity in allocation of land and promotion of flexibility in land use. Thus, it mentioned that the objectives of the urban land policy should be a) to achieve an optimum social use of urban land, b) to make land available in adequate quantity to both public authorities and individuals at reasonable prices, c) to encourage cooperative community effort as well as individual builders to develop and construct houses, d) to prevent concentration of land in a few hands, e) to use land to finance urban development, f) to encourage socially and economically efficient allocations of land so that land development reserves and land utilization is optimal g) to promote flexibility in land use in response to a growing city. Also, the Eleventh Five Year Plan (2007-2012) emphasizes, governments at appropriate levels including local authorities have to strive to remove all possible obstacles that may hamper equitable access to land. It identifies failure to adopt appropriate urban land policies and land management practices as the primary cause of inequity and poverty. Thus it calls for a flexible land policy which will make conversion from one use to another cost efficient and promote equity.

#### **5.2.4. Funding:**

India needs to invest around 1.2 trillion dollars in urban infrastructure capital over the next 20 years, an increase from 765 rupees per capita (17 dollars) to 6,030 rupees per capita (134 dollars) per year. India's annual spending would therefore need to increase nearly eight fold on a per capita basis. The challenge of bridging this gap is tough but doable. There are four sources of funding that India should tap into to a far greater extent than today: Monitoring land assets, collecting higher property taxes and user charges that reflect costs, debt and PPPs and formula based government funding. Contrary to popular thinking, the largest Indian cities can generate 80 to 85 per cent of the funding they require from internal sources.

#### **5.3. Governance and Planning**

In 2030, India's largest cities will be bigger than many major countries today. But India's governance of cities is muddled and ineffective and nowhere near ready to face this challenge. As an example, India's large cities are still governed by bureaucrats who can be transferred out of office at short notice. This is clearly untenable. This arrangement is in sharp contrast to large cities elsewhere that have empowered mayors with long tenures and clear accountability for the city's performance. There are good examples within India, too. Delhi has quasi-statehood status. Kolkata's modified mayor-commission model provides a good starting point for reforming municipal structures in India with its combination of an empowered political executive and administrative support from a technocrat. Indian cities need to rethink how they deliver services to their citizens. Currently, cities deliver services through archaic and bureaucratic departments. India must move to corporatized agencies (BEST) that have specialized internal management and the ability to make quick decisions. The ability of these agencies to tap selectively into private-sector expertise through public private partnerships will represent an equally compelling opportunity to improve services and introduce more transparency in delivery.

India's planning is in a very poor state. On paper, India does have urban plans - but they are esoteric rather than practical, rarely followed and riddled with exemptions. For example, no city in India has a proper 2030 transportation master plan, nor has any of them allocated enough space and appropriate zoning for affordable houses. Hence plans need to be more detailed, comprehensive and enforceable and exemptions should be rare rather than the norm. By revamping its planning system in this way, India could save more than 6 million hectares of potentially arable land over the next 20 years.

## **VI. CONCLUSION**

Sustainability in Urbanization is the need of the hour for cities in the world. It is a concept that is gaining ground among environmentalists in recent years and has been defined and analyzed in the article. The article has then taken the case of India and the challenges that lie ahead for the country to ensure sustainability in urbanization. Sustainable solutions to those challenges have also been provided. Though India faces a daunting task to meet its aspiration of urban sustainability - while tackling rapid population growth, vast infrastructure needs and transportation requirements, it can utilize the sustainable solutions to its advantage. However, all this is subject to conflicting short-term political imperatives and requires meticulous policy making and governance. Global precedents for creating sustainability in cities exist and India has to follow them in order to achieve sustainable urbanization.

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